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ABSTRACT

A project was developed to establish improved educational methods, techniques, and tools as well as to provide the knowledge base for educational innovation and programs of integrated curricula in primary schools. This final report highlights work conducted during 1980-81 in seven member countries of the Asian Program of Educational Innovation for Development (APEID): India, Japan, Malaysia, Nepal, the Republic of Korea, Sri Lanka, and Thailand. Chapter 1 of the report discusses reasons for, different aspects of, and the meaning of curriculum integration. Chapter 2 deals with different forms of integration, such as integration by broad fields of subject areas, by themes, by projects, and by emerging interests and concerns of children. Chapter 3 provides an account of approaches to integrated curriculum development, including centralized, decentralized, and mixed approaches. Chapter 4 focuses on organizational structure, implementation processes, roles of teachers and other personnel, and strategies for curriculum implementation and for insuring continued interest in innovative projects. Chapter 5 discusses purposes of evaluation and aspects of formative and summative evaluation. Chapter 6 describes the support system necessary for curriculum integration, and chapter 7 briefly discusses research and development activities related to implementation of the integrated curriculum. The concluding chapter indicates participating countries' future plans and the implications of such plans for APEID. Appended are a chart depicting the status of each country's project and a list of program participants. (RH)

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APEID

Asian Programme of Educational Innovation for Development

INTEGRATING SUBJECT AREAS IN PRIMARY EDUCATION CURRICULUM

A Joint Innovative Project

Report of the Finalization Meeting

UNESCO

UNESCO REGIONAL OFFICE FOR EDUCATION IN ASIA AND THE PACIFIC
Bangkok, Thailand, 1982

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INTRODUCTION

The Joint Innovative Project on Integrating Subject Areas in Primary Education Curriculum was initiated under the recommendation of the Fifth Regional Consultation Meeting on APEID (Bangkok, 21–30 March 1978). The primary objective of the Project was to provide knowledge base and establish improved methods, techniques and tools for programmes of integrated curriculum and for educational innovation in particular.

The design of the Project comprises four phases of activities as follows:

a) National status studies;
b) Planning meeting,
c) Development of curriculum and curriculum materials including try-outs and study visits; and
d) Finalization meeting.

This final report highlights the work conducted over the period 1980-1981 in the seven APEID member countries that took part in the Project.

Chapter I and II are based on the ideas generated from the first and second phases of the project activity which provided the concept, conceptual framework and forms of integration as practiced in the participating countries. Chapter I deals in detail with the reasons for curriculum integration, and the different aspects and meaning of curriculum integration. Chapter II deals with the different forms of integration such as integration by broad fields of subject areas, by themes, by projects and by emerging interests and concerns of children.

Chapter III, IV, V, VI, VII and VIII are based on the outcomes of the in-depth analyses of the third phase of the study. Chapter III provides an account of some of the approaches to integrated curriculum development such as the centralized approach, decentralized approach and the mixed approach. It also discusses the different steps in the development of the integrated curriculum such as formulation of objectives, selection and organization of learning experiences, try-out and improvement of instructional materials.

Chapter IV brings into focus the organizational structure, the implementation process, the role of teachers and other personnel and the strategies for implementing and for promoting effective curriculum implementation.

Chapter V is based on the steps taken by participating countries for evaluating the integrated curriculum. It discusses the purposes of evaluation and different aspects of both formative and summative evaluation.

Chapter VI deals with the supportive system necessary for curriculum integration. It covers some of the crucial supporting aspects in the implementation of the curriculum such as training of teachers, roles of administrators, facilitating the school's capacity for innovation, community participation and professional support.

Chapter VII provides the research and development activities related to the implementation of the integrated curriculum. It brings into focus the need for

research and discusses briefly the types and areas of research that could be initiated by the participating countries.

Chapter VIII draws together the future perspectives as visualized and planned by the participating countries. It discusses briefly the major thrust of the activities proposed to be carried out by the countries in the coming years and the implications for APEID.

A chart showing the status of projects on integrating subject areas in primary education curriculum in the participating countries is presented in Annex I. Although all the information could be found in the various chapters of this report, the presentation of the chart is intended to give the readers a comparative and total picture of what has been done and will be done in the countries.

Chapter 1

THE CONCEPT OF INTEGRATED CURRICULUM

In recent years, qualitative improvement of primary education has been a major concern in most of the countries in Asia. In countries like India, Nepal, Sri Lanka and Thailand, qualitative improvement of education is conceived as one of the measures to achieve universalization of primary education. Efforts at qualitative improvement are characterized by measures to make the content and process of education more relevant, meaningful and interesting. There has been a growing realization of the need to direct educational efforts to the all round development of the child with added emphasis on adequate preparation for adjustment to the fast changing society and ensuring a happy personal and social life. It is in this context that the countries participating in the Joint Innovative Project have been trying to experiment with and adopt an integrated curriculum at the primary stage of education.

Among the countries which participated in the Joint Innovative Project on Integrating Subject Areas in Primary Education Curriculum, the exchange of experiences during 1980-81 has been mostly confined to the lower primary stage of education, especially grades I and II. There appeared to be a general concensus among the participating countries about the great potential of the integrated curriculum and the integrated approach to teaching for generating human qualities, making the process of learning more pleasant and motivating, promoting better understanding of and adjustment to one's environment, and nurturing and developing the mental faculties of the child.

Reasons for Curriculum Integration

When curriculum was stigmatized as a loose aggregation of different subject matters, a question was raised as to its relevance as a means of providing a meaningful learning experience. It was the lack of its relevance for real daily experience that heightened concern for a new form of curriculum. The emergence of the idea of integrated curriculum, therefore, could be attributed to the cry for making curriculum meaningful and real to every child who is growing into a mature person and a responsible citizen.

As problems of our daily life increase in complexity, there has been greater demand for a systematic application of learning and knowledge to actual problems of life. In the meantime, the disciplines have grown in scope and depth and infiltrated into school curricula to find their identity in respective subject matters. The last two decades have seen the self-contained effort within each subject area to

develop a more relevant curriculum, but this has contributed not so much to integration as to the fragmentation of curriculum.

If what is taught to and learnt by children does not appeal to learners' needs, problems and concerns, the effort and resources put into curriculum development are wasted.

Though there are variations in the history tradition, culture, geographical conditions, social milieu, economic development, national and educational objectives among the countries participating in the Joint Innovative Project, there appears to be unanimity in the desire for designing and developing an alternative approach to the traditional discipline-based, subject-centred and teacher-dominated system of 'primary education'. While there were a wide variety of reasons that led to the efforts made or being planned for integration of curriculum, the following reasons seem to be common to the participating countries:

1. **Psychological and pedagogical reasons**

Curriculum integration implies certain basic principles of learning and is often contrasted with the fragmentation or compartmentalization of knowledge which is characteristic of the subject-based curriculum. It is widely recognized that the prevalent subject-based and teacher-centred system of education does not meet the psychological needs of the child. It is not adequate to provide enough challenge to the inquiring mind of the child. Little attention is paid to habit formation and value orientation.

The children at the primary grades are curious and active by nature and display exploratory behaviour. Therefore, their minds do not work in water-tight compartments of different subject areas or disciplines. In the case of a child, the motives for learning arise from his own curiosity and from his desire to understand and master his environment through exploration and inquiry. Once he starts exploring the environment, the study becomes integrated and interdisciplinary. Therefore, an integrated curriculum is the most desirable one at the primary stage of education.

Studies conducted on the development of concepts among children at the primary grades in some of the participating countries established the fact that the intellectual development of children proceeds in certain stages, each stage being distinct from the preceding or the subsequent stage in terms of mental abilities or acquisition of concepts. Children do vary in their rate of development, but each child passes through every stage of intellectual development sequentially. It has been observed that children, especially in the lower primary grades, remain at the concrete operation stage and they learn to solve problems best when they can manipulate real objects in real-life situations. For them learning is doing and not memorizing. This makes it imperative that children should be provided with concrete learning experiences related to their environment and life situations rather than making them deal with abstract ideas. Curriculum integration enables children to be in greater contact with and respond to concrete experiences as it cuts across subject divisions.

Learning is facilitated if children are given opportunities to deal with a variety of materials and allowed to seek answers to questions which they would like to pur-

sue. An integrated curriculum and an integrated approach to teaching provide ample opportunities for children to explore and express themselves regarding the immediate environment in which they live. It involves a child-centred approach to education which is essential to creative personal development.

The style of learning through an integrated approach involves inquiry, formulating questions and seeking answers to them. It is also capable of providing diversified and varied experiences, stimulating and satisfying intellectual and emotional cravings of children. It enables children to experience a more pleasant and invigorating educational process and facilitates the advancement from the first collective life of exploration and discovery to the future process of continuous learning. Integrated curriculum reduces the overlapping of subject-matter content and presents the content systematically, reinforcing the learning activities within and among the subject areas. It also makes it easier to focus on learning of certain basic skills such as linguistic ability and numerical and space perception skills by making learning lively and pleasant through the fulfilment of interests and concerns of children by taking into account their developmental states and intellectual ability. Through an integrated approach it is also possible to foster creativity and self-confidence since it provides much scope for children to engage in creative mental processes. An integrated curriculum also helps to reduce the curriculum load and makes the content of education more in consonance with the intellectual and emotional cravings of children because of their involvement in a variety of activities which cut across the demarcating contours of the subject areas and disciplines.

The present classroom teacher who performs the traditional role of the sole dispenser of knowledge and information does not involve himself in identifying meaningful and interesting learning situations related to the child's environment in the broad framework of competencies expected of a child in every grade. The irony of the situation is that in this age of knowledge explosion, there is popular pressure in almost every country to expand the curriculum even at the primary stage of education to the detriment of children's basic needs in their early years of life.

The drawbacks and deficiencies of the present system, especially the irrelevance of the curriculum in terms of the needs and interests of the children and the aspirations of the society result in high drop-out rates and wastage at the primary stage of education. The existing practices of fragmented teaching of subjects without adequate relationship to the environmental situations and life experiences of the children is not conducive to the proper growth of children at the primary grades. Therefore, it is essential that the content and process of education at the primary stage of education are integrated with the life, values and the environment of the child. It is only by the process of integration that meaningful and relevant curriculum can be provided at this stage.

Curriculum integration also implies certain underlying principles of knowledge. A subject-based curriculum is considered to set up barriers between the structures of knowledge. It tends to confine the study to a limited range of information. The division of knowledge into distinct subjects often does not indicate appropriately the true picture or the reality of children's natural ways of understanding, solving problems and judging through natural and spontaneous inquiry. Since the aim of

education, especially at the primary stage, is to encourage enquiry, it is essential that active pursuit of the knowledge should arise from activities for themes or topics or processes which are relevant to the needs, experiences and interests of the children. For these, an integrated curriculum or an integrated approach to instruction is the most desirable.

It has often been argued that the curriculum or content of education should be drawn on the basis of certain relevant environmental situations or events or real-life problems rather than merely on the basis of the basic concepts of certain subjects. Most of the problems cannot be studied or solved within any one cognitive structure. In order to solve a problem it may be necessary to take actions which would require different sorts of inquiry and competencies dealing with a variety of subject areas and situations. In many areas of understanding or in the case of solutions to different problems, the integration of distinct disciplines becomes essential.

It could also be observed that in most cases the disciplines represent the organization of experiences and the structures of knowledge which are already worked out. Though the disciplines represent the logical structure of the knowledge, they do not indicate the process whereby one might attain these structures of knowledge. If a child is provided with opportunities to explore in his own way he may also learn the same structure of knowledge embodied in a discipline but the educational process towards the learning of it would be an integrated activity along with a variety of concomittant learning covering different disciplines or subject areas. Hence an integrated curriculum leads to more efficient learning.

2. **Sociological reasons**

There are also certain sociological issues supporting the integrated curriculum. Knowledge has value only if it meets the needs of the learners or it has some social utility, indicating that the curriculum should be centred around the different needs of the children. Since the structure of the knowledge with respect to the needs of children do not get confined to any of the disciplines, it implies that the knowledge imparted through an integrated curriculum could be in the tune with the needs of the people or expectations of the society.

There is a growing realization that if education is to be effective, it must help the learners to seek answers to some of the fundamental real-life problems around them. This would be possible only if the curriculum provides for interrelationship between and among different domains of knowledge as well as different disciplines. This calls for development of an integrated curriculum which involves inter-disciplinary, problem-centred or activity-oriented approaches in order to enable children to tackle some of the complex problems facing the society.

Although statements of objectives of all participating countries strongly emphasize the all-round development of children, in actual practice more stress is placed on children's cognitive development. A subject-based curriculum fails to translate the stated objectives of primary education into practice; for example, while the objective is to provide 'basic education' as a pre-requisite for laying the foundations for further learning, designed to meet the essential needs of producing good

citizens capable of facing real-life problems in the society, the present traditional system does not develop in the children their competencies in terms of knowledge, skills, and attitudes required in real life.

3. **Administrative reasons**

Some of the participating countries have also identified certain administrative reasons for curriculum integration. The need for reducing the number of textbooks for children and enriching the textbooks and materials being used at the primary stage of education has been a factor supporting curriculum integration. The cost of separate books and materials has gone beyond the reach of many families in some countries. The responsibility of the nation in terms of investment in education for making textbooks free at the primary level has definitely been great. By reducing the number of textbooks and materials through curriculum integration, more money can be spent for improving the quality of learning materials produced for the integrated curriculum. The larger number of books also leads to more expenditure on transportation and also delays in their distribution. If the number of books is reduced through an integrated approach, it could also minimize the problems related to the high cost of transportation and distribution.

Curriculum integration has also been favoured because of the shortage of teachers in the primary schools, especially those in the rural areas. In such schools, a teacher would be required to manage simultaneously children studying in more than one grade. Since the integrated approach involves activity-based teaching, it helps in multiple-class teaching. However, one should be aware of the fact that the success of curriculum integration will depend largely on a high degree of teacher competence. Without improvement of teachers' qualifications the curriculum integration will fail.

Thus it is evident that there are compelling reasons in each country to think of, plan for, and implement alternative approaches to the traditional primary education curriculum. The various status reports also indicate that, even before the Joint Innovative Project was launched in 1980, some countries had already implemented, either on a pilot basis or on a larger scale, an integrated curriculum either for the entire primary stage or for the lower grades of the primary school.

Aspects of Curriculum Integration

It has been widely recognized by participating countries that the expansion of educational facilities needs to be accompanied by a qualitative adjustment of the curriculum to the learning style of the child and the socio-economic opportunities likely to be available. It has been argued that the total curriculum including its structure, content and methodology should be directed towards the child in the community and environment. It has also been stressed that the curricula should provide for relevance, flexibility and local specificity. In attempting to develop a relevant and flexibile integrated curriculum based on the needs, interests and environment of the children in the broad framework of national goals and aspirations it is necessary to take into consideration the following aspects of curriculum integration:

1. **Integration of knowledge and the learning process**

The popular concept of curriculum includes two components — knowledge and process. For transmitting the ingredients of culture in the same form to succeeding generations or in the case where knowledge is useful as its own independent behalf, a learning programme may well be composed of isolated pieces of knowledge to be acquired. However, the characteristics of modern society — such a. the increasing sophistication of problems that man faces and the explosion of knowledge — demand that attention be shifted from the sheer amount of knowledge to the process of learning, through which a learner developes methods of inquiry and gets acquainted with things in the process of doing.

Acquiring knowledge begins with the initial stage of knowing, which consists of learning how to do things. Knowledge does not exist in separation from the process and vice versa.

In the last two decades, the world of curriculum studies has experienced a stream of subject-matter studies and some significant changes in the concept of curriculum. One of the most remarkable contributions these studies and curriculum development projects have made for the advancement of curriculum was that they have succeeded in integrating the learning of concepts and principles with the process of inquiry.

2. **Integration of cognition and affect**

There has been a growing criticism that the educational objectives in the affective domain have received less attention as compared to objectives in the cognitive domain in the actual process of teaching and learning. There has been a serious discrepancy between what was meant in the statement of objectives and the actual outcomes of education. And the most serious discrepancy is found in the affective domain of objectives. The cognitive and affective domains constitute a seamless web and one in the absence of the other is far from retaining educational value. Any teaching material and method that ignores the learner's feelings and concerns cannot be said to have any relevance. Provision of learning experiences that appeal to the learner's feelings and concerns may serve to involve him more deeply in the content that is being learned. In our efforts to improve curriculum, we need to concentrate more than ever on providing opportunity for students to raise fundamental questions concerning human predicament and to feel the suffering of man and to commit oneself in the cause of a new social order. The affective function of teaching and learning pertains to the emotions, the passions, the motives, the concerns, the empathy, the appreciation, and the moral and esthetic sensibilities. If education should serve to improve human destiny by creating a new social order it has to find ways of integrating the cognitive and affective functions of instruction.

3. **Integration of knowledge and conduct**

The relation between knowledge and conduct deserves as much attention as that between knowledge and affective traits. This is a key question in moral education. Learning about values and even the development of ability to make value judgement can be meaningless if they fail to lead the learner to behave in accordance with the values he chooses. Divorcing knowledge from conduct amounts to dividing

curriculum into two parts – one based on knowledge and the other on conduct, yet both dealing with the same contents. It becomes simply natural that knowledge and conduct be treated as an integrated whole.

4. **Integration of school learning with the actual life of the child**

The final test of curriculum lies in its utility to improve the quality of life of the learner. Any effort to integrate subject areas, if it should serve the real purpose of curriculum integration, should be sure to see to it that whatever is taught in classrooms becomes meaningful and a powerful assistance to the child in improving his or her life outside. This is why some form of curriculum integration tries to centre the instructional process around the children's interests, needs, and concerns as expressed in their actual life.

In a sense, we can find a good model of curriculum integration in the primitive education where there was no school as such. The primitive people tried to teach their children what they needed for survival. Boys were highly motivated to learn new teachniques of hunting wild animals safely because they knew the need of learning them and they were eager to master the skills. What they did in learning was what they were doing in actual living.

5. **Integration of subject areas**

In the preceding section, we have examined the possibility of integration between knowledge and process, between cognitive and affective domains, and between knowledge and behaviour. This possibility underscores the need to integrate subject areas into a coherent learning programme and this has been the major concern of ours in dealing with curriculum integration. In teaching a subject, the teacher should not be engrossed in its knowledge content alone; as much attention should be directed to the inquiry process, the affective domain and behaviour, guarding against the breakdown of subject areas which tends to accompany greater emphasis on facts, and concepts and principles to the denigration of others. The process, the affect, and the conduct are as important as the knowledge content in education.

The integration of subject areas may also be considered in two ways. In the first place, the integration of subjects is advocated on the ground that there are common threads that cut across all subject areas. To illustrate the point, knowledge or attitudes acquired in social studies may be reinforced by similar experiences in other subject areas. The premise that all subject areas are in a complementary relation suggests the desirability of organizing the common threads into an integrated programme which provides meaningful learning and facilitates a continuing growth of the learner. Isolated bits of knowledge find no place in an integrated curriculum; a bit of information about biology stands very little chance for integration with a knowledge of physics. On the other hand, basic concepts and principles open up the possibility of integration by forming the common threads that hold different subjects in a complementary relationship.

The other way of integrating subject areas reflects a more active approach in the sense that effort is made to tear down walls between subject areas and to organize an integrated curriculum around the needs and problems of learners and the

society. If teachers are well trained, if administrators share the same belief and co-operate with teachers, if external examinations do not hinder teachers in their creative teaching, if the parents and the society at large give full support and so on, then such a scheme of integration will be able to demonstrate its real potentiality to help children learn and grow towards the constructive goals.

Meaning of Curriculum Integration

Curriculum integration has assumed a variety of shades and forms in different countries in response to the specific problems or cherished expectations from the primary education system. Each country has evolved an operational definition or definitions of curriculum integration in its own context. Hence it is difficult to adopt one common crisply defined definition of curriculum.

It is, however, evident that curriculum integration extends beyond mere approach or method of presenting subject areas.

Conventionally, the term 'curriculum integration' was used to denote combbining two or more subjects to form a meaningful learning area that would help effective integration of learning experiences in the learner. There should be no misconception, however, that mere combination of subject matters will automatically guarantee the integration of learning experiences within the learner. The aim of curriculum integration lies in integration of learning experiences which are real and meaningful to the learner.

In the planning meeting on Joint Innovative Project on Integrating Subject Areas held in Seoul, Republic of Korea in November 1980, members of the participating countries agreed to define the term 'curriculum integration' as the reconstruction of knowledge and experiences as a whole to suit the needs and life-situation of children with a view to enabling them to develop individuality and become useful members of the society. This definition does not provide clear guidance for curriculum builders and teachers in their actual planning and implementing of inte grated curriculum. The meaning of the term needs further specification and this necessitates different operational definitions to help each participating country adopt its own definitions and explanations in accordance with its own educational goals and objectives, structures, resources, traditions and needs.

In a broader sense the term "integrated approach" refers to a method of instruction in which children work on a theme or on a topic or on an activity or on a real-life problem in which the work involves competencies related to more than one discipline or subject area. An integrated curriculum is one in which the subject boundaries are ignored and is based on the natural and spontaneous enquiry of children as well as on the activities and experience of the learners which do not respect subject divisions. In other words, integrated curriculum involves organization of the content and the teaching-learning process around themes or activities or problems or processes which require interdisciplinary learning.

Chapter II

CONCEPTUAL FRAMEWORK AND FORMS OF INTEGRATION

Conceptual Framework

Each participating country has evolved its own conceptual framework and forms of curriculum integration based on considerations of its own needs and resources. An important determinant of the variation in approach from country to country is the extent to which a particular country decides to depart from a subject-centred curriculum to one based on real-life experiences.

Curriculum integration can exist in varying degrees. There can be integration within a subject. There can also be integration on a wider basis across subject divisions covering part of or the total curriculum. The degree of integration among subject areas and for various purposes is likely to vary from grade to grade. An integrated curriculum, therefore, can be viewed in terms of a continuum ranging from partial to total integration. When all the separate areas of knowledge and experience of the curriculum are visualized and projected as a unified whole, designed to achieve the stated objectives of primary education, correlated conceptually, organizationally and pedagogically, then the approach encompasses total integration. Any degree of departure from this framework is considered to be partial integration.

Those participating countries that have attempted to achieve total curriculum integration have nevertheless been concerned about the adequacy of a total integrated approach to the development of basic skills relating to language and mathematics. It is commonly believed that the acquisition of such basic skills requires a certain amount of systematic and structured instruction in separate subject areas. Consequently, most countries have adopted only partial curriculum integration, though the degree of integration is found to vary from country to country.

India has attempted integration of all curriculum areas for grades I and II. This is based entirely on specified themes related to the child's environment. The environmental aspect included in the curriculum goes on widening from grade to grade. In this case integration is also attempted in the development of instructional materials as well as in devising teaching learning situations. A graded series of units has been identified to provide a basis for the development of instructional materials and teaching-learning strategies.

Nepal also attempted to adopt a totally integrated curriculum for grade I. Conceptually, the curriculum is based totally on the child's environment, emphasiz-

ing the idea that schools are not separate institutions but extensions of the home that reach out to the community and society as a whole and are true to the tradition and cultural heritage of the country. It is designed to develop the total personality of the child, and the general framework of the integrated curriculum is organized with the basic theme "The child and his environment".

The Republic of Korea has attempted a total integration of curriculum designed to be studied for the first month in grade I. The study is based on the theme "We are the first graders". It is more or less an orientation programme designed to provide the children, immediately after their entrance to the primary school, with a guide to the forthcoming learning and adjustment in school life. The planning and preparation of learning activities and materials cut across subject boundaries and various life aspects of children. During this programme, children live and learn through the so-called "integrated day" in which there are minimum fixed periods and no barriers between subjects. During the day, the children are given freedom to follow any activity as long as their interests in it continue. The boundaries between play and work, betweeen cognitive, affective and psychomotor domains, and among age levels of children in the same class appear to be less evident during an integrated day.

Forms of Curriculum Integration

Several forms of curriculum integration at the primary stage of education are practised in the countries participating in the Joint Innovative Project. Prominent among them are (i) integration by broad fields of subject areas (ii) integration by themes and projects and (iii) integration by emerging interests and concerns of children. The focus of each of these is the environment and real-life experiences. These have been categorized according to the relative emphasis in each one of them. However, they are not mutually exclusive. In fact one form often contains elements of other forms since the content of the integrated curriculum is focused on the environment and life experiences of the learners.

1. **Integration by broad fields of subject areas**

A grouping of two or more subject matters that are closely related to each other to form a broad field such as communications, general science, social studies, environmental studies, and so on is commonly practised in the primary schools of the participating countries. Even though better integrated learning is expected from the broad field approach than from teaching separate courses, observations of the practices indicate that the mode of teaching and learning used in the broad field is not very much different from the conventional teaching in separate courses. In this sense, the broad fields in the primary school curriculum are becoming more subject-centred than any other organization of learning (such as themes or projects) designed to integrate classroom learning with children's actual life situations.

With these observations in mind, it may be safe to say that mere grouping of two or more subjects into a broad field does not necessarily result in integration of the curriculum unless it is organized and studied in such a way that the knowledge and skills from the subjects are used when they are needed in the course of problem solving or in pursuit of goals set by unifying themes.

An example of curriculum integration through a broad field approach is found in India. Integration is being attempted among some groups of subjects as well as integration of educational programmes with life needs and life experiences. Among the groups of subjects which have been integrated, the integrated general science programme has attempted to integrate subjects like natural and physical sciences. In recent years the areas of nutrition, health education and environmental sanitation have also been integrated with the science education programme. The use of the environment and local resources has helped to bring about further integration in science education which makes it more meaningful and practicable. The integrated social studies programme has attempted to integrate subjects like history, geography, civics, moral education, etc. There is a great emphasis on character building in the integrated social studies programme. The determination of themes and the details of their presentation in the instructional materials were guided by the statement of the objectives of social studies. Under the nationwide programme of primary education curriculum renewal, the instructional materials in social studies and general science use the approach described above. Additional integrating threads for the total curriculum in all areas are being picked up from the child's interests and needs, the child's immediate environment (physical as well as social), the aspirations and needs of the local community as well as the Indian society at large. Integration is also being attempted among different curriculum areas. Science and social studies have been further integrated as environmental studies.

Environmental studies offers opportunities for self-expression and development of personal creativity. The style of learning through environmental studies involves inquiry, formulating questions and seeking answers to them. The environment becomes a co-ordinating agent dealing with whole situations rather than dealing with subject-based approaches. Therefore, the curriculum is designed to take the learners into the surrounding environment where they (a) collect data on changes that occur, (b) map features of the surroundings, (c) measure observable quantities and (d) make judgements about the quality of aspects of the environment. The environmental approach to teaching-learning in the classroom is further helping to integrate different curriculum areas at the implementation level in all classes at the primary stage.

Japan has attempted to integrate and relate allied subjects centering around a specific one, to make learning more meaningful, exciting and interesting. Children are exposed to different subjects from the very beginning of primary education. The integrated approach is adopted with a view to making learning more child-centred and pleasant. Integration of learning experiences is pursued through creative teaching. This approach attempts to relate learning in one subject to those in other subjects and to relate learning in classrooms with the life outside the school.

The integration through creative teaching is characterized by four types of integrated approaches. The first type is characterized by the integrated approach through the introduction of various learning activities into a subject. In this type, integration means the integration of various instructional activities normally used in other subjects. In the teaching of social studies, such activities as singing, drawing and composition which are normally used in other subjects like music, art and handi-

craft and language are introduced to make use of them for the effective attainment of instructional objectives.

The **second type** uses an integrated approach through the integration of various teaching content in a subject. In this type, integration is made when various teaching contents normally taught under different subjects are incorporated under one topic. For example, sciences, music, art and physical education may be integrated within one topic like 'Things around us' or "Transportation and communication'.

The **third type** is characterized by a mixture of subject-wise instruction and integrated subjects. In this type, the subject-wise curriculum is presented in the course of study and subject-wise instruction is in principle given accordingly. However, while doing this, attempts are made to integrate the teaching content of several subjects and to formulate an independent learning unit to be taught separately from subject matter teaching in the teaching plan for the year.

The **fourth type** involves formulation of a new subject or learning course by integrating certain existing subjects. In this type of integration an attempt is made to integrate existing subjects (e.g. social studies and science) and to formulate a new subject or learning course of instruction. In most cases integration is made between social studies and science.

2. **Integration by themes and projects**

Most of the practices aimed at integrating curriculum in the participating countries fall in this category. The distinctive features of this form of curriculum integration lie in the use of themes or projects as centres of organizing learning experiences and in the use of a large block of time. In this approach to integration, knowledge, skills, and experiences from more than two subject areas and/or broad fields are integrated.

The thematic approach is defined as a teaching-learning strategy based on major themes and using a "block" time-table. From these major themes, sub-themes are formulated which become units of learning. Such units may also be carried out in the form of projects and activities which cut across the subject areas.

In India the integrated curriculum is centres around a few major themes which are closely associated with the environment and life experiences of the children. The themes included in the curriculum for classes I and II are as follows:

Class I:
- (i) **Our Family**: Organization of family, functions of family members and family size.
- (ii) **Our Needs**: Food, clothing, houses, recreational activities and games, health and cleanliness.
- (iii) **Our School**: School campus, people who work in the school, maintenance of the school and duties towards school.

Class II
- (i) **Our Neighbourhood**: Identification of important places in the neighbourhood and their locations; what is available in the neighbourhood, what is manufactured and produced, social and cultural activities in the neighbourhood and duties towards the environment.

(ii) **Our Earth:** What is available on the surface of earth and beneath the surface, changes brought about by man on the surface of the land.

(iii) **Our Sky:** Sun, moon and stars as observed by children; directions in relation to the sun, climate and weather, rainfall, mist, temperature; living objectives in the sky.

The major themes selected for curriculum for classes III, IV and V are as follows:

Class III: Our state (Delhi)

Class IV: Our country (India)

Class V: Our universe

In the experimental project of Japan, several subject areas are integrated into themes for children's activities. The series of such themes are as follows:

a) Let us go to pick up flowers with friends – integrating Japanese language, science, music, art and handicraft, and physical education;

b) Let us play with sanils – integrating science, music, art and handicraft, and physical education;

c) Route to the school – integrating Japanese language, social studies, art and handicraft;

d) Let us play with leaves and nuts – integrating arithmetic, science, music, and art and handicraft;

e) Playing shadow – integrating Japanese language, science, art and handicraft, and physical education;

f) Winter life – integrating social studies, science, music, art and handicraft, and physical education;

g) Let us do "mame-maki" – integrating Japanese language, arithmetic and art and craft; and

h) Let us make moving toys by using elastic band and play with them – integrating Japanese language, science, music, art and handicraft, and physical education.

In Malaysia, the integrated approach is centred around the major theme "Understanding of the environment".

In this approach, language and mathematics are not integrated though activities carried out under the integrated approach may be used to reinforce language and numerical abilities and concepts related to these. The reason for keeping language and mathematics separate is the need to teach basic and related concepts in these subjects systematically during the first three years of the primary school. This is also in line with the recommendations of the recent Cabinet Report on Education which stresses the need for a more systematic approach to the teaching of the 3Rs in the primary school.

In Nepal the general framework of the integrated programme was organized with the basic theme "The child and his environment". The basic theme was further divided into the following sub-themes:

Class I: The child and the immediate environment

Class II: The child and the neighbouring environment

Class III The child and the larger environment

In all the classes, the human, social, physical, cultural and natural aspects of the environment are studied.

The human aspects include family relatives, friends, neighbours and fellow citizens to all levels which emphasize on relationship, interdependency, and customs.

The physical aspects deal with man-made things like buildings, schools, houses, shops, roads, industries, and so on. The child learns about materials, construction, shapes and sizes, needs in relatin to population size, and locations.

The cultural aspects relate to festivals and customs at family level, community level, area level. The content areas are national symbols, songs, events of importance and introduction to the national builders. The child learns about the crown and its importance to the kingdom.

The natural aspects deal with the plants and trees, birds and animals, land and water, and the need for processes of conservation. The treatment is intutitive and observational to make the child aware of the world of nature around him, things which interest him and contribute to his happiness.

In the Republic of Korea the traditional subject matters are grouped into three areas represented by three uinifying themes as follows:

Daily life: grouping moral education, Korean language, and social studies for 1st and 2nd grades;

Inquiry life: grouping mathematics and science for 1st grade; and

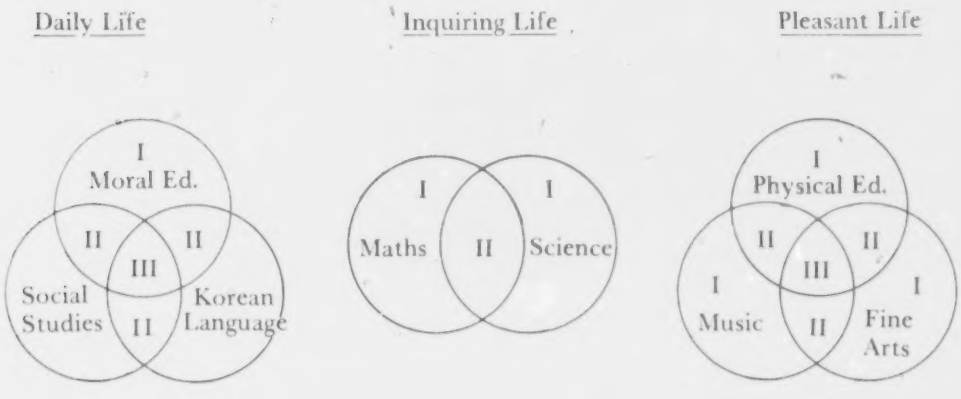
Pleasant life: grouping physical education, music, and fine arts for 1st and 2nd grades:

The programme of "Daily life" is centred around the problems of daily life such as moral habits, use of language, way of social life. The "Inquiry life" includes the basic skills and knowledge which are necessary for the future study of science and mathematics. Mathematics and science are considered relevant to developing an inquiring disposition. The "Pleasant life" consists of expressive activities – the expression of feelings through physical movement, instrument playing or singing, and picture drawing. This programme is also intended to bring the children into the world of aesthetic life.

This approach integrates not only those related subjects but also two or more broad fields into one area, and the areas of learning experiences are organized around the major themes. In this approach, language and mathematics are not taught in separate subjects but are integrated into areas of learning.

The units or topics that share identical contents and experiences render themselves amenable to complete integration with each other as shown in Compartment

III in the following figure. On the other hand, there are those that offer little to be integrated (Compartment II). Compartment I represents those areas that make integration most difficult if not impossible. In this case, it is necessary to organize the units in such a way that the characteristics of the various subject matters are retained.



In Sri Lanka, the integrated approach was introduced at grade 1 in 1974 after a trial period in pilot schools. The approach has continued up along the grade ladder in a yearly sequence and is now in operation in all schools. The same theme recurs in greater depth in a spiral format every year throughout the primary level. This design has been followed to activate another form of innovation. This is where a single teacher is forced to provide meaningful experiences to children of varying ages simultaneously. As the same themes are involved, the teacher can help the children to work co-operatively on the same project undertaking activities at their own level of development. The organizing principle for integrating subject areas is the theme which runs across subject areas. The themes used are the following:

a) Our homes and people who live in them;
b) What we eat and drink
c) What we wear;
d) Help for our work;
e) Unity through diversity;
f) Things around us.
g) Our school and its neighbourhood;
h) People who help us;
i) Means of transport and communication;
j) Our earth and its surroundings; and
k) Things we see and hear.

Sri Lanka's experience has been that the themes can be elaborated around some selected pivotal points. Subject areas are integrated around the themes and different themes may differ from each other in relative reliance upon subject areas

being integrated in the themes. Sri Lanka has attempted total integration, but eventually language and mathematics, in addition to being included in the integrated programme, came to be treated separately too as the learning of skills in these basic subjects requires more intensive, systematic teaching to provide for cumulative development.

In Thailand, the curriculum structure is composed of four areas of learning experiences:

1. Basic Skills Development comprising of Thai language and mathematics treated as separate subjects;

2. Life Experiences, involving the problem-solving process and various aspects of human and societal needs and problems;

3. Character Development dealing with subject areas conducive to development and habit formation, i.e., music, arts, moral education, physical education, and habit formation activities.

4. Work Oriented Education involving areas of practical work and establishment of vocational foundation, i.e., housekeeping, agriculture education, and arts and crafts.

Thailand has attempted an integration of subjects in the area called 'Life experiences', for which the contents of social studies, natural science, and health education have been completely integrated, obliterating their specific subject-contours, so as to equip students to learn to solve social and life problems through integrated knowledge and experiences.

The second variation of curriculum integration in Thailand relates to integration among the areas of learning experiences, Using the area of "Life experiences" as the centre, relevant parts of "Character Development" and "Work Oriented Education" have been combined to form 12 themes or learning units as follows:

1. Living Organisms
2. Family Life
3. Environment Around Us
4. Our Country
5. News, Events and Important Days
6. Occupation
7. Energy and Chemical Substances
8. Universe and Space
9. Transportation and Communication
10. Our Neighbouring Countries
11. Population Education
12. Politics and Government

Units 1 – 5 are taught in grades 1 and 2, while units 1 – 8 are taught in grades 3 and 4; and units 1 – 12 are taught in grades 5 and 6.

Thailand is now in the process of experimenting with another dimension. Besides the present integration which runs across subject areas within each of the primary grade levels, the Curriculum Development Centre is now attempting to

introduce another kind of integration running across subject areas as well as across grade levels. It is envisaged that this kind of integration will facilitate teachers to teach a multiple classroom more effectively. This experiment is, at present, limited to grades 1 and 2 and only in two areas, i.e., 'Character Development' and 'Work Oriented Education'.

Integration of subject areas could also be attained in a curriculum based on a series of projects. The projects may be carried out as part of learning activities under a theme or independent of any of the themes. In project-based learning, learning emerges as a result of exploration, inquiry and direct experience with life and things. The subject boundaries are discarded by the activities under the project and essential facts and principles in subject areas are integrated in a natural way in relation to the tasks to be performed. The projects could be built around (i) purposeful and productive activities, (ii) creative, recreative and cultural activities, (iii) activities leading to training in citizenship and social living and (iv) activities leading to clean and healthy living. The tasks related to an activity under the project, involve the development of competencies related to different subject areas and disciplines. Projects could also be built around certain exploratory or investigating activities. They could also be centred around certain aspects of the environment such as "things that move in the environment", "things that fly", "rocks in the surroundings" etc., activities that would lead to the development of competencies related to different subject areas.

In the project approach, the content in the discipline is secondary in importance, although children do learn the facts and concepts under each subject area. The primary aim is to get the children to use certain mental processes which are common to all disciplines and which will be of great use in their further studies. The activities under the project lead to the development of certain essential mental processes such as observing, using space time relationships, discriminating, classifying, interpreting, verifying, generalizing through induction and deduction, formulating hypotheses, data gathering and analysis, establishing hypothesis, controlling variables, inferring, predicting, communicating, originating solutions to problems and the like.

3. Integration by emerging interests and concerns of children

Another way of integrating subject areas in primary education curriculum is developing curriculum and learning units based on solutions to certain real-life problems of the learners. The problems may be personal problems, community problems, vocational problems, social problems and development problems. The learning materials could be built around the solutions to a variety of problems. Such a curriculum could be centred around units dealings with problems and issues such as air, water and noise pollution, poor yield of crops, afforestation, unwise use of natural resources, exploitation, unhygiencic conditions, common diseases etc., the solutions of which require competencies in different subject areas and disciplines. Since the solutions to real-life problems require competencies in a variety of subject areas, the problem centred curriculum lends itself to natural integration of subject areas and situations. The compartmentalized subjects have no identity in this project.

Among the activities dealing with immediate and emerging needs and interests of children are those related to certain informal aspects of the school curriculum, including the extra curricular activitites. These also provide for curriculum integration since they deal with what children see and hear in their daily lives. However, creative planning on the part of the teachers and other curriculum planners is required to make these programmes conducive and optimal to the maximum development of the children according to their growth potential.

Every approach to curriculum integration at the primary stage of education is built around the environment and the life experiences of the children. The integrated curriculum based on the environment of the child and the integration of teaching with his life experiences will involve the type of thinking which is likely to lead to a proper understanding and appreciation of the environment, human endeavour and of the society. However, if integrated approach is to provide meaningful and purposeful learning situations, it is necessary to select appropriate activities and formulate instructional objectives on the basis of the needs and interest of the children, their mental maturity, the aspirations of the community and the physical resources and capability of the school to implement the programme effectively.

Chapter III

DESIGNING AND DEVELOPING AN INTEGRATED CURRICULUM

The growing realization of the need to provide meaningful and purposeful learning experiences relevant to the needs, interest and environmental experiences of the learners has brought in its wake a series of attempts to develop integrated curriculum and an integrated approach to teaching at the primary stage of education. The integrated curriculum is conceived as part of the total experience related to the child's life experiences and learning, both within and outside the school.

In all the participating countries, the curriculum for the primary stage of education is developed on the basis of the policies adopted and guidelines provided by the national government from time to time. Once the policies for curriculum development are finalized at the national level, the task of the development of the curriculum is assigned to a national or regional agency which formulates and follows a certain approach to curriculum development, keeping in view the overall policies and priorities of the country.

Approaches to the Development of Integrated Curriculum

1. The centralized approach

One of the approaches to the development of an integrated curriculum is what is referred to as the centralized approach. In this case, a group of experts is brought together centrally to design a relevant learning programme for learners which constitutes the basis and guidelines for the curriculum in all the schools in the country or in a region. This process is found to be a quick and easy way of curriculum development but it suffers from the possible inherent drawback of misinterpretation or even non-co-operation at the implementation stage due to lack of adequate knowledge or antipathy on account of non-participation by users such as teachers, teacher educators or supervisory personnel at the design stage. Therefore, this approach has not been favoured in any of the participating countries.

2. The decentralized approach

Another approach to the development of an integrated curriculum is the decentralized approach. In this case, the teachers and other personnel who are the users themselves develop the curriculum plan and instructional materials on the basis of their experiences and environment. Inherent in this approach is the refreshingly engaging feature of realistic 'down-to-earth' planning by successful practioners themselves and thereby a greater possibility of the curriculum being relevant to local situations and, therefore, accepted more easily. The process of curriculum development under the national project on Primary Education Curriculum Renewal (PECR)

undertaken in India represents an example of this approach. In the case of the PECR project, the framework of the curriculum for schools covered under the project is developed by the State Primary Curriculum Development Cells (SPCDCs) located at the State Councils of Educational Research and Training/State Institutes of Education, under the guidance of the Primary Curriculum Development Cell at the national level located at the National Council of Educational Research and Training (NCERT), New Delhi. The detailed curriculum plan and curriculum guides are developed at the state/union territory level jointly by the members of the SPCDCs, teacher educators of elementary teacher training institutes, teachers of schools covered under the project and the supervisory staff. The teachers of the project schools are also actively involved in the process of developing instructional materials for children. Experienced authors are also associated with the writing of instructional materials. All the materials are developed by groups of writers in which various categories of functionaries (teachers, teacher educators, SCERT/SIE members and other experienced authors) are represented.

3. The mixed approach

Between the centralized approach and the decentralized approach which form the end points in a continuum lies the 'mixed approach' favoured by many countries. In this case, the groups of designers comprise, on the one hand, the experts with professional experience, background and ability, who critically examine different interpretations of education and work towards realizing a progressively wider meaning and, on the other, the teachers who assist in devising a workable teaching and learning structure. Examples of this approach are found in the Republic of Korea and Thailand where experts and teachers from the central and local levels work together in planning, designing, developing and implementing the curriculum and materials. In the case of the Rep. of Korea, a distinctive approach called research and development (R/D) model has been adopted through which the Korean Educational Development Institute (KEDI), an educational R/D centre in the country, has played a decisive role in the whole process of integrated curriculum development, primarily in the context of the centralized educational system.

Sri Lanka's curriculum development efforts at the primary education level since the 1970s also fall into the category of the mixed approach to curriculum development.

Nepal has a centralized system of education. But in the curriculum drafting stage, the teachers, supervisors and subject specialists work together as members of a committee. A special task force is also organized which looks after the overall activities of an integrated primary curriculum project. Once the curriculum is drafted by the Curriculum Committee, it goes to the Curriculum Development and Innovation Committee, and after modifications, if required, it goes to a higher level committee named the Curriculum and Textbook Coordinating Committee. The curriculum is implemented after the Government's approval.

Japan and Malaysia also follow a mixed approach to curriculum development where experts and teachers work together in the development and implementation of the integrated curriculum.

Development of Integrated Curriculum

There are certain common procedures followed in all the participating countries in the development of integrated curriculum. The development of the curriculum is carried out through a sequence of activities grouped under four major phases. These are: (i) formulation of objectives ; (ii) design of the learning experiences; (iii) tryout of instructional materials and the curriculum; and (iv) improvement of the curriculum, in the light of the tryout data. The effective and systematic design of an integrated curriculum implies adequate attention to all the four phases of its development, since they are very closely related to each other and inadequacy in any of them may affect the effectiveness of the curriculum as a whole.

1. **Formulation of objectives**

As practised in most participiating countries, the major activities involved in the formulation of objectives are the identification of needs and the entry level behaviour of the learners, analysis and statement of the broad aims or goals of the curriculum and specification of the instructional objectives in observable and measurable terms.

It is necessary to specify objectives in terms of the competencies expected to be attained by the learners so that all those involved in the implementation of the curriculum will be able to identify the exact outcomes of learning. Explicit statement of objectives would provide a rational basis for deriving content and designing learning experiences as well as to assess the learning outcomes.

a) **Identification of needs and entry behaviour**

The primary education curriculum concerns itself primarily with learning experiences that children have in their course of growth and development and their interaction with the world. Therefore, curriculum designers need to consider all the forces that exert influences on the nature of children's learning experiences. The way the curriculum is organized and conducted determines the nature of children's learning experiences. Therefore, it is necessary to identify the needs of the learners before the curriculum is developed. This is all the more important in the case of the integrated curriculum which aims at providing an education based on the life experiences and environment of the learners. A knowledge about the common needs and problems concerning the learners and the community as a whole is a prerequisite to successful initiaition, development and implementation of the integrated curriculum.

This may involve an analysis of the existing situation, both in terms of those features of the environment that are conducive to and have a positive bearing on the effective learning and also other aspects which may hinder the educational process in the school and the community.

This analysis would lead to a basic understanding of the needs of the community or perhaps even the country.

In India, a detailed survey was conducted of the project areas and schools in each of the states participating in the project PECR. Since the project areas were

selected so that they represented the major socio-economic, cultural and geographical variations in each of the states, the survey findings provide the basic data required for curriculum development for the whole nation. Each school prepared a detailed survey report of its area for reference and use for identification of relevant learning situations and activities to be adopted in the classrooms. It also reflects the learning needs and special procedures of the specific groups of children and communities. The survey findings of schools representing a homogeneous cluster are further consolidated. These provide the basis for evolving differential curricula for different clusters of schools. The survey findings of different clusters are further consolidated at the state level to identify the common core curriculum for all schools at the state level. Thus, in a state where there are significant variations among clusters of schools, the differential curricula supplement the core curriculum.

The survey data also provide important benchmark data regarding the position of enrolment, the teaching-learning strategies, the status of children's attainments and other aspects of school curriculum at the time of launching the project. This is used for comparative studies as the project progresses in the subsequent years.

For the conduct of the survey, the PCIC, NCERT at the national level evolved the necessary tools and procedures and organized the training programmes for teams from the SCERTs. In the actual conduct, the SPCDCs involved members of the supervisory teams for the teacher training institutions, school supervisors and the teachers of the project schools.

Malaysia has also made a study and review of curriculum materials and reports in the Ministry of Education. Primary school syllabuses were analysed in depth, and visits to the Government schools were made to assess teaching methods and use of available teaching and learning materials. In addition, the team also visited the International School and the Japanese School in Kuala Lumpur to observe alternative approaches to classroom instruction and organization. The problems of overloaded and overlapping curriculum were identified, and a decision was made to try out an integrated curriculum and integrated approach to teaching on an experimental basis.

Nepal initially started the Primary Integrated Project in Education which analysed the existing primary school curriculum and prepared a scope and sequence chart for the integrated curriculum. On the basis of the scope and sequence chart, the whole grade-wise objectives and contents for each grade were determined.

The Republic of Korea has conducted basic studies to identify and analyse the shortcomings of current curriculum and needs from students, parents, teachers and policy makers for future directions. According to one such study based on the survey, 87.8 per cent of teacher respondents and 78.8 per cent of parent respondents opted for integrated curriculum as adequate for lower grades of primary schools. Regarding subject matter, most respondents were of the opinion that the number of subjects were too many to provide for meaningful learning of fundamental elements. They went further to indicate the necessity of merging them into broad programmes.

In Thailand, a nationwide needs assessment was conducted a few years ago to lay the foundation on which structure and content of the present primary school curriculum have been developed.

b) **Specification of broad aims of the curriculum**

The identification of the needs is followed by the specification of the broad goals or aims of the curriculum. The aims could be determined on the basis of the answer to the following questions:

i) What should be the broad aims of this integrated curriculum?
ii) What kind of people should the learners be after undergoing the educational process?

Aims of the integrated curriculum represent the guidelines for undertaking the subsequent activities in the process of curriculum development. Though inexplicit and written in the abstract, they do provide the base for designing, evaluating and improving learning experiences and curriculum plans. For example, some of the common aims of education at the primary grades are as follows:

i) Acquisition of tools for formal learning, namely literacy, numeracy and manual skills;
ii) Acquisition of skills of purposeful observation;
iii) Acquisition of habits of co-operative behaviour within the family, school and the community;
iv) Development of aesthetic perception and creativity through participation in artistic activities and observation of nature;
v) Development of physical strength and team spirit through recreational activities;
vi) Development of skills for planning and executing productive activities;
vii) Development of social responsibility and awareness of being part of the nation;
viii) Development of habits of cleanliness and healthful living;
ix) Development of ability to express freely in creative activities;
x) Acquisition of skills of objective thinking; and
xi) Development of desirable qualities of character and personality such as leadership, kindness, honesty, initiative, curiosity and inquisitiveness, and decision-making ability.

The broad aims of education in all the participating countries are derived from the national philosophy or the constitution or the national plans or the aims of education accepted universally but modified within the framework of already identified national needs and priorities. Within these limits a further breakdown could be made to give more specificity to the form of goals related to the programme of integrated curriculum development at the primary stage of education. While doing this, the necessity to consider the requirement of subject disciplines and the possibility for and the nature of their integration would have to be kept in mind. These goals in turn could then be translated into even more specific objectives based on the developmental levels of children, the possible structure for intro-

ducing integrated curriculum development, and the strategies that could be adopted for implementation of the curriculum.

c) **Statement of instructional objectives**

In order to be useful for designing an integrated curriculum, it is necessary to specify the instructional objectives in precise terms. Vaguely stated objectives may be interpreted in different ways by different people.

An instructional objective is an accurate, precise and unambiguous description of an outcome of learning. It should indicate what the learner will be like when he has successfully completed a learning experience. An objective could be considered as a pattern of behaviour or performance which the learner should be able to demonstrate after completing a learning experience.

A statement of instructional objectives is perhaps the most important step in the process of development of an integrated curriculum. When objectives are not stated in precise terms, it becomes difficult to evaluate the learning outcomes of the learners as well as to evaluate the curriculum. Objectives also facilitate the selection and design of appropriate learning experiences. Decisions about sequencing of learning tasks, content and selection of instructional strategies also depends upon an operational statement of instructional objectives.

To the greatest degree possible a precisely stated learning objective is concerned with an observable and measurable terminal behaviour. However, depending upon the preciseness and level of abstractness in the terminal behaviour, it is possible to state objectives mainly at four levels. The most general objectives are those referring to future states of the learners. Subsumed in such objectives are such expressions as "become good citizen", "develop scientific attitude", "develop confidence in life", and "develop ability to think critically". The next level of objectives is concerned with the hypothetical dispositional states of the learners. In such statements of objectives such words as "know", "understand", "apply", "appreciate", "analyse" and the like are used. The third level of objectives refers to certain inferred generative capabilities and mental processes of the learners. Included in such objectives are action verbs such as "recall", "reason", "formulate hypothesis," "establish hypothesis," "infer", "predict" and the like. These indicate the kinds or types of test items for evaluation of performance of the learners. At the most specific level, instructional objectives are named in such a way that they lead to the description of specific test items for evaluation of the learning outcomes. In such objectives, action verbs such as "state", "list," "define," "write down," "identify," "calculate," "distinguish," "categorize" and the like are used.

It is possible to distinguish between objectives in terms of their levels of complexity within each of the three main categories – cognitive, affective and psychomotor – of learning. Some skills or abilities are more difficult to attain than the others. For instance, cognitive objectives range from simply remembering factual information to skills or abilities like analysis, synthesis and judgement involving problem solving. In the affective domain of learning at the lowest level the objectives may be to get the learner to pay attention or receive a new experience, and at the higher level the objective may be to persuade the learner to attach a value to

what he learns. At each level of the hierarchy, there can be objectives that can be attained only by learners who have already attained the objectives of learning at the lower level. The same is true of psychomotor learning too which underlies performances whose outcomes are reflected in the speed, precision, accuracy, force and smoothness of motor activities and co-ordination and rapidity of bodily movements.

In all the participating countries attempts have been made to specify instructional objectives, as far as possible in behavioural terms, indicating the competencies to be attained by the learners in the cognitive, affective and psychomotor domains of learning. In India detailed objectives in terms of competencies to be attained by the learner by the end of grade V have been identified and a "minimum learning continuum" has been developed. Detailed objectives for every unit of the integrated curriculum in every grade also have been carried out for the guidance of the teachers. Similar attempts are also being made in all the other participating countries.

It is true that the more specific and behavioural the outcomes are, the greater chance there is for achieving them and assessing whether they have actually been achieved. However, there is one reservation that should be kept in the forefront of one's mind in this connection. It should be remembered that there might be some objectives, especially in the affective domain, that defy being put in specific objective behavioural terms, as the actual manifestations of having achieved these objectives could be a wide spectrum of diverse forms of behaviour, and it is perhaps impossible to envisage all of them at the initial stages. For this reason, it may be prudent to accept that stating objectives beforehand exclusively in behavioural terms may be a very difficult, if not impossible, undertaking, specially in the affective domain. In this context, when one considers also the fact that one of the main aims of integrated curriculum development is the affective aspect, one cannot escape the conclusion that expressing objectives in measurable behavioural terms is not the one and only condition for evaluation. In short, it is only one of the means to the final end of effective evaluation.

2. **Designing learning experiences**

The major activities involved in the designing of learning experiences are selection and organization of the content, development of instructional materials and teachers' guides, and selection of instructional strategies. Some of the criteria adopted by the particpating countries in designing the learning experiences are as follows:

(i) Learning experiences should be designed keeping in view the objectives of the integrated curriculum;
(ii) Learning experiences should have transferability and utility value and should elicit and maintain the interests of the children;
(iii) Learning experiences should be organized logically and psychologically keeping in view the instructional design and developmental stage of the learners;
(iv) In organizing learning experiences, efforts may be made to develop them spirally and/or concentrically; and

(v) Varied instructional strategies should be adopted to enable children to attain the expected learning outcomes.

a) **Selection and organization of content**

The content of education under the integrated approach is drawn from the environment and the focus is on real-life experiences and situations. In the case of curriculum developed by the participating countries, the child's immediate environment in the home, school and neighbourhood provides the basis of the curriculum for children at the lower primary grades.

In India, the integrated approach permeates all stages and components of the curriculum. The objectives for the primary stage of education are visualized in terms of the minimum competencies essential for the child to lead a rewarding life as an individual and as a member of the society. The competencies are related to the following curriculum areas:

(i) Language;
(ii) Mathematics;
(iii) Environmental studies;
(iv) Socially useful productive work;
(v) Healthy living; and
(vi) Creative experience.

The content of education at the lower grades is based on the immediate environment. As the child moves from lower grades (I and II) to the higher grades (III, IV, and V), he is exposed to learning situations drawn from the wider and distant environment of the district and state (class III), country (class IV) and the world (class V). Even in grades III, IV and V the wider and distant environments are introduced in relation to children's actual experiences in his neighbouring environment. Linkage of learning with the child's experience is thus an important strategy for the integrated approach throughout the primary stage of education.

It was observed that as the child grows older, the concept of environment goes on widening. At first the child is interested only in his family and then his school and his neighbourhood. When he reaches class III at the age of 7+ he starts understanding the meaning and other aspects of his city, town or district and state. So the study of "Delhi" is the theme for class III. The underlying idea for the whole curriculum of class III is that the child should feel proud of his city or state and shoulld realize and understand that his city or state forms a part of the country India. The idea of dependence for his needs on the neighbouring states is also highlighted. In the same way in class IV, the theme is "Our India". An idea of national integration, unity in diversity and interdependence has been the undercurrent throughout. The child also begins to realize that his country is a member of the bigger family of the world. The idea of international understanding starts taking shape at this stage and this is further strengthened in class V where the theme is "Our World".

In all the three classes (III, IV & V), the content has been so organized that the focus remains on needs such as food, clothing, housing, health, cleanliness,

water, air and those related to cultural and social aspects of life. For example, in class IV, under the unit heading "Food", the child is introduced to:

Variety of food that people eat;
How food items are produced and where;
How they are procured – the idea of markets, wholesale and retail trade, transportation of food;
Social problem of hoarding of grain and other food items, smuggling, wastage;
The idea of interdependence of states, helping the needy in times of calamities like drought, famine, excessive rain;
Food preservation aspects, bringing in a lot of science;
The ideas of population education; and
Mathematics in relation to certain items and their production.

Thus in all the chapters or sub-themes under this unit, the focus is on the child's main need, "Food".

In Japan the main objectives of the integrated approach to teaching were: (i) to enable the children to develop positive and comprehensive learning attitudes; (ii) to develop creativity; (iii) to provide opportunities to observe natural and social phenomena and to increase the vocabulary and expression of the children. Accordingly, the content for education is centred around certain selected themes which involve children in a variety of activities. The major themes through which integrated activities are introduced are: "let us play with leaves and nuts"; "playing shadow"; and "winter life". In all these themes, the emphasis is on the creative activities of the children. For instance, the theme, "let us play with snails" brings the children in touch with the features of food, body shape and movement of snails by observing them. This leads to the learning of characteristics of different animals in the environment. The activities are designed in such a way that they integrate six subject areas and moral education with science as the nucleus of the activities under the theme.

In Malaysia, the choice of themes was based on accepted principles of learning from the known to the unknown and from the child's immediate environment, gradually expanding to the world he lives in. The themes identified were based on the contents of existing National Syllabi for the four subjects. The themes are as follows:

Standard I

1. My home and my family;
2. Our food, drinks and our clothing;
3. Things that help us do our work;
4. My school and its immediate environment.

Standard II

1. Our needs in our everyday living;
2. Our Public Services;
3. The environment around us;
4. The school and its surroundings.

Standard III

1. A study of our school and its environment;
2. A study of people who help to make our life comfortable;
3. Knowing and respecting our local festivals and celebrations;
4. A study and appreciation of local history.

In Nepal also the content for the integrated curriculum is based on environmental experiences. As children move from one grade to the other, there is a gradual progression to the wider environmental situations in the higher primary grades. The basic assumption underlying this is that it is easy to make the learners progress through a series of experiences with the environmental situation, ranging from the most familiar to the less familiar, or from the simpler to the complex. One may start with the topics based on the immediate neighbourhood. The scope of the content could progressively be enlarged into issues at the district/state levels, regional/national levels and later on at the world level. In such an approach it is possible to expose the children not only to a diversity of experiences but also to certain concepts, principles and problems in depth.

In all the units of the curriculum, the lessons, activities, and teaching strategies are laid out in model form through a fictitious family situation.

	Class I	Class II	Class III
1.	Family members	Joint family members	Community members
2.	The child's home	Neighbourhood's homes	Community homes
3.	Family tasks and responsibilities	Tasks and responsibilities of joint family	Tasks and responsibilities of community
4.	Family festivals	Family and community festivals	Community national festivals
5.	Birds and animals	Birds and animals	Birds and animals
6.	The child's neighbourhood		
7.	Plants and trees	Plants and trees	Plants and trees
8.	Community festivals		
9.	The child's school	Neighbourhood's school	Community school
10.	National festivals	National festivals	
11.	Land and water	Land and water	Land and water
12.	A shop	A shop in the neighbourhood	Shops in the community

The new curriculum of primary school for lower grades in the Republic of Korea includes eight subject areas such as moral education, Korean language, social studies, mathematics, science, physical education, music, fine arts, and extra-curricular activities, with the objectives of developing basic learning abilities, formulating sound life habits, facilitating physical and mental growth, and promoting aesthetic pursuits. In the development of new texts and teacher's guides, these subject areas are integrated into three broad courses in grade 1 and four courses in grade 2.

The integrated approach is centred around three major themes – daily life, inquiring life and pleasant life. These themes integrate some of the subjects included in the primary education curriculum.

The subject areas in curriculum and courses in lower grades are shown in the following table:

Subjects in curriculum	Name of courses by Grade	
	Grade 1	Grade 2
Moral education Korean language Social studies	Daily Life	Daily Life
Mathematics Science	Inquiring Life	Arithmetic Natural World
Physical education Music Fine arts Extra-curricular	Pleasant Life	Pleasant Life

The spiral mode of curriculum development is adopted as a special strategy in Sri Lanka. This is to meet the situation in which distinctions between grades vanish and content merges automatically in small rural schools in which children of different levels have to study together under the same teacher. Through this means, an opportunity is given to the teacher to help the children to proceed at their own pace, without compartmentalizing them strictly into grade levels.

In Thailand the integrated curriculum was launched to improve the existing curriculum of grades I and II with special reference to two areas of study, i.e. character development and work-oriented education. The curriculum related to these areas is centred around three major themes covering the following three units of study:

Unit 1

We help ourselves –

i) Our happiness (playing, singing, dancing and painting);
ii) Good health (basic movement, interchange playing);
iii) Our behaviour (eating, sleeping, discretion, paying respect);
iv) Our clothing (choosing, cleaning and keeping of clothing, dressing).

Unit 2

We help our parents –

i) House work (receiving guests, housekeeping, cleaning and decorating, auxiliary work, storing of household belongings);
ii) Home gardening (planting and growing flowers, kitchen gardening);
iii) Making happy home life (no quarelling, no lying, no stealing).

Unit 3

We live with others –

i) Co-operation;
ii) Open mindedness;
iii) Forgiveness;
iv) Honesty.

b) **Development of instructional materials**

Once the content is selected and organized, the next task in the development of the integrated curriculum is the development of instructional materials including teachers' guides. In all the participating countries the kind of materials developed are curriculum plans, textbooks, workbooks and teachers' guides. Teachers, supervisors, psychologists, content specialists and evaluators are involved in the preparation of the instructional materials.

c) **Selection of instructional strategies**

The selection of appropriate instructional strategies is very important for the achievement of instructional objectives underlying the integrated curriculum. The starategies should be applicable to the local classroom situation. They should also lead to the development of desirable attitudes, higher mental ability and learning how to learn.

The instructional process in the integrated approach involves a relationship between learners and materials, the presentation of content to the learners and the activities the learners and teachers carry out. There is, however, no single particular instructional strategy which could be considered to be the best in the case of the integrated approach. Different objectives might be achieved through different instructional strategies.

In the case of the integrated curriculum, the instructional strategy should be more learner-centred and activity-oriented. The teachers should try to develop a conducive atmosphere for learning by assisting the learners to gather appropriate information, by providing learning guidance and feedback to the learners about their progress towards the objectives and by playing an active role in the learning process through active participation in their activities. In other words, the role of the teacher in the integrated approach is more of a guide and helper to the learners rather than merely a communicator of knowledge.

Prominent among the instructional strategies at the lower primary grades as practised in the participating countries are discussion, role-playing, field trips to places of importance, and activities and games. In most cases visits are undertaken by the learners along with their teachers to places of interest and practical significance around the school or the village. The immediate environment as observed and experienced by the child becomes an important part of learning, since it provides opportunities for concrete experiences dealing with a variety of environmental situations, events and problems. The visits around the localities could facilitate the development of the ability to observe things in one's environment, changes that take place in the environment, and the interrelationships among and interdependence between human beings and other living things.

Children at the primary grades, especially those in the lower primary grades, enjoy games and other activities like reciting poems, participating in quizzes, drawing, and making collages. These could be resourcefully used as an instructional strategy in an integrated approach to teaching. Since some of these activities provide for co-operation among team members and competition between teams or between individuals, they foster a co-operative and competitive spirit in the children.

Another instructional strategy which is used with advantage in the integrated approach is the project method. In this method real-life situations which lend themselves to exploration are chosen, and learners work on the project either individually or in groups seeking answers to the questions formulated for investigation. In such projects the learners are exposed to all the steps involved in the process of problem solving.

A variety of instructional strategies are used by the countries participating in the Joint Innovative Project. In India the following instructional strategies have been adopted in schools in which the integrated curriculum is introduced:

i) Learning through relevant and meaningful activities for each grade based on local environment;
ii) Directing the process of learning towards the attainment of the competencies and no more memorization of facts;
iii) Introduction of group activities for co-operation and socialization;
iv) Identification of activities in which children participate daily or very often for developing good habits, character formation and value orientation;
v) Active observation and exploration of the environment by the children for developing scientific skills and attitudes; and
vi) Remedial individualized instruction for mastery learning of basic skills in language and mathematics.

Similar strategies are also adopted in Japan, Malaysia, Nepal, Republic of Korea, Sri Lanka and Thailand.

In Japan it is widely recognized that there is a need to introduce a variety of learning activities beyond the walls of subject areas so that the children can participate actively in the teaching-learning processes. For example, in the case of social studies, maps, chronological tables, statistics, graphs, debate, observation, in addition to the use of audio-visual equipment and materials, are common tools for teaching. Attempts are also made to incorporate writing of essays, singing songs, playing rhythmic movement or drama in the process of teaching of social studies so that children can actively participate in the learning programme.

In Malaysia, emphasis is also laid on classroom management and organization. Since learning takes place within and outside the classroom, in the school and classroom context, the teacher plays a salient role in facilitating learning. An important consideration is the creation of a conducive learning environment through the organization or reorganization of classroom space, furniture and learning activities that encourage active participation by the learners.

Classroom organization relates to the arrangement of physical objects such as desks and chairs, cupboards, display boards and the creation of various learning corners. Such an organization should bring about greater interaction between the teacher and the learner, between two learners, and between the learners and learning materials.

Emphasis is also laid on small groups in individualized instruction. Learning is made more interesting and meaningful through the use of a variety of instructional materials such as educational games, graded markacards, reading cards and other materials.

Rural schools, often through force of circumstance, have no alternative but to group children of many abilities and levels together, because of the fact that they have only one or two teachers available to serve them. This situation, rather than being a token of impoverished circumstances, could be turned into a positive tactic for making learning exciting for all the children. This is doubly so in the case of integrated subject content, as various educationally sound principles may be applied practically, such as peer learning, appreciation of abilities other than purely academic ones, exposure to a variety of circumstances, group effort and group dynamics.

These and many other similar devices may have to be resorted to in order to make integrated learning of subject content a reality to be actually experienced in schools.

Chapter IV

IMPLEMENTING INTEGRATED CURRICULUM

Implementation here refers to the final part in the scheme of things when a decision is made by a country to launch the integrated curriculum or adopt the integrated approach. It can be assumed that this decision would only be taken after the project had gone through all the steps discussed earlier in the previous chapter. These steps are necessary in order to ensure the smooth implementation and success of the programme. Among the member countries participating in the project, India and Thailand can be said to have reached this operational part of the programme and have implemented the integrated curriculum. The Republic of Korea has completed its tryout and will be implementing the programme nationwide in 1982. Malaysia's pilot project ended in 1981 and, as a result of a policy decision it has instituted a new project to try out a new primary school curriculum with emphasis on the 3Rs. The experiences gained from the pilot project, however, have served as valuable inputs for the new primary school curriculum project. Japan is now at the experimental stage and NIER expects that the integrated approach will be implemented throughout the country when the Ministry of Education revises the course of study sometime in the 1980s. Nepal has been testing the integrated curriculum materials and it will take two more years to evaluate their effectiveness. Sri Lanka has completed the first cycle of implementation up to grade V. In view of the findings that surfaced in the first cycle, activities to support and enrich the integrated programme are being designed and put into operation now.

Organizational Structure for Curriculum Implementation

In order to activate the programme, the human resource component has to be commissioned to operate as a well-built network of people and organizations. The organizational set-up for the responsibilities at various levels would have to be clearly specified including those at central, regional and local levels, and personnel provided for the institutional framework. The experiences of the participating countries clearly indicate that there is a chain of institutions/agencies involved in the implementation of the integrated curriculum.

Although the organizational structures vary in the participating countries, there are however many common threads. In every country, the curriculum innovations are carried out through a central-level research organization. These institutes are known by different names. In India, the National Council of Educational Research and Training (NCERT) works in collaboration with the network of State Councils of Educational Research and Training (SCERTS) or the State Institutes of Education (SIE) in each of the states. In Japan, the National Institute of Educa-

tional Research (NIER) monitors the innovations. In Malaysia, Sri Lanka and Thailland, it is the Curriculum Development Centre (CDC). In Nepal, the Curriculum Textbook Supervision Development Centre monitors the programme. In the Republic of Korea, it is the Korean Educational Development Institute (KEDI).

The central-level monitoring institutions work in collaboration with a large number of intermediary agencies at the state or district level. In India, each state/union territory has a Director of Education and education officers at the district and block levels. The NCERT works in collaboration with the SCERTs and SIEs and also involves the education officers. In addition, teacher training institutions located in the neighbourhood also provide guidance and report back to the SCERTs the progress of the project. In Japan, the Chiba Education Centre at the prefecture level plans, implements and evaluates the programme in the schools. In Malaysia, the CDC works in collaboration with Directors of State Education Departments, state oranizers and district supervisors. In Nepal, the National Curriculum, Textbook and Supervision Development Centre (CTSDC) implements the programme through Regional Education Directorates (RED) and District Education Officers (DEOs). In the Republic of Korea, KEDI works through a number of Committees of subject matter specialists, writers, and illustrators, In Sri Lanka, the CDC has supporting supervisory staff at the district level. In Thailand, the CDC works in co-operation with the Central Supervisory Unit, the Regional Supervisory Unit and the Provincial Supervisory Unit.

Each of the agencies makes a well-defined contribution towards the achievement of the purpose of integrated curriculum.

The Implementation Process

As reflected above, in most countries, a specific agency, division or department of the Ministry of Education would be entrusted with the responsibility of looking after various aspects of the project implementation. Except in very special circumstances where extraordinary events precipitate governments into sudden action, it is customary for most countries to implement the integrated curriculum in stages beginning with the first grade of the primary school and moving upwards one grade at a time each year.

As the programme gains strength and begins to be accepted as a possible alternative to other known learning systems, the focus of attention shifts from its image of being only an interesting oddity to a feasible challenging goal that is worth a try. It is at this stage that there should be evidence of serious support from all quarters to those courageous enough to venture to try the innovation. Such support may be shown in various ways. For instance, even after the pilot experimental project is over, it is useful for the division or department of the Ministry of Education responsible for looking after the project implementation to keep in close contact with selected schools or teachers who may work in active partnership with the design teams in trying out particular materials or methods. Such schools are named associated schools in Sri Lanka and the teachers involved are called "key-personnel" in Malaysia.

A further device for helping to generate interest in the programme is the informal organization of study groups at a local level with the specific purpose of finding solutions to some common problems on a collective basis. Such a measure has the added advantage that the participants so involved can develop their own strengths on a self-help basis without waiting helplessly for assistance to be provided through in-service education courses. Further, through such study groups, it would be possible for the central agency to assess suitability of guidelines, teachers' guides and other materials that have been produced for the project. It might well turn out that such guidelines are either too general for application in a particular local situation or too rigid to the extent that very little flexibility is given to practising teachers to devise their own content or strategies. Such inflexibility would certainly inhibit the teaching styles and potential of creative teachers and make them feel bound by the shackles of a rigidly structured curriculum that brooks no deviations.

Constant monitoring of the progress of the project shuld be made so that modifications and refinements of the programme can be effected. The Republic of Korea is already committed to launch a curriculum evaluation project for quality control in 1982 along with the nation-wide dissemination of the integrated programme.

Effective montoring of the programme constitutes a very important activity and will be discussed in greater detail under formative and summative evaluation in Chapter V.

The Role of the Teachers in Implementing the Integrated Curriculum

While the role of all the concerned agencies is significant, the teacher plays a very crucial role in the effective implementation of the integrated curriculum. He is a vital link between the objectives and the children. It is he who interprets and uses all the instructional materials to the best advantage of the child. By adopting appropriate strategies of teaching-learning, he ensures a gradual but sure growth of the child towards the objective of all-round development.

On the basis of the experience of the participating countries, the specific roles of a teacher in the context of the implementation of integrated curriculum can be summarized as follows:

- Identifying the learning needs of the children;
- Identifying suitable activities and learning situations related to the child's environment;
- Organizing the activities to ensure maximum participation of the child;
- Creating a pleasant environment for the child in the school;
- Developing a programme of daily activities which will help the child to acquire desired good habits and values;
- Ensuring mastery learning of the basic skills of language and mathematics;
- Ensuring full realization of the cognitive and affective objectives of the integrated programme; and
- Fostering values through the teacher's own example.

In addition to the above roles in the school, the teacher can also be introduced to the development of the curriculum plan and instructional materials as has been

experimented with in India. In this process, the teacher gets thoroughly acquainted with the new curriculum and he can implement it easily and with conviction.

With an innovative project such as this, teachers need to be systematically oriented to proper procedures and methods if they are to play their roles effectively. The training of teachers is taken up separately in Chapter VI.

Strategies for Promoting Effective Curriculum Implementation

With any curriculum innovation, it is very important for those involved in its implementation to consider strategies for ensuring continued interest in the project. A concerted effort should be made by all to disseminate information on various aspects of the project to as many members of the educational spectrum as possible. A simple but effective method is through the publication of a periodic magazine, newsletter or a bulletin. Such a publication can serve the purpose of nudging teachers to further innovation by setting out ideas picked up by the central committee through their library research or personal visits abroad. As time goes on and the work gets decentralized, provision may be made for similar magazines on a regional basis so that more teachers can talk about their 'doings' while the best innovations can be still highlighted in the national magazine.

Another alternative would be to include articles or write-ups on the country's experiences in existing educational journals as is being practised in most of the participating countries.

At some stage in the project, there may also be need to open up resource centres in different regions of the country that will be a source of steady support to the programme. At these resource centres teachers may see prototypes of instructional materials such as audio-visual teaching aids, learning games and kits. Workshops too may be held at these centres, specially designed to help teachers to make their own teaching aids using low-cost materials, or even informal discussion groups may be gathered together there to talk on specific issues arising in their work. Decentralization of curriculum development, often discussed but rarely practised, might become a reality through these informal attempts by teachers to thrash out ideas and produce teaching and learning materials.

Grouping of schools into small manageable clusters of 5 or 6, intended to serve the two-way purpose of helping each other and planning co-ordinated programmes of action, is another strategy to keep innovation alive. These small closely-knit groups may then form into larger networks for wider representation of teachers' views and broader dissemination of information on teaching techniques. This was found to be a very fruitful device when it was tried out on a trial basis in a few representative neighbourhoods in Sri Lanka and is suggested as a major educational strategic change in the proposal for reforms in education to be implemented there shortly. Thailand has some 400 schools of varying size and standard all over the country being equipped and designated as leader schools. Such schools serve as models and provide guidance for other schools in the area on how the integrated curriculum can be effectively implemented. In Malaysia and the Republic of Korea, combined school-based workshops and combined classes/workshops are held which serve as forums for teachers to exchange ideas and share their experiences.

Educational broadcasting (both radio and television) is another possibility which can be considered, as has been done in Japan and is being planned in the Republic of Korea.

It must be reiterated that the most important educational consideration which can contribute towards the success of the integrated curriculum is the degree of flexibility given to the teacher to explore new ground and to gain insights into the almost limitless possibilities of integration.

Issues and Problems in implementing Integrated Curriculum

Implementation of experimental projects in integrated curriculum will need to be subjected to close scrutiny and public dialogue in order that issues and problems may be brought up and dealt with if necessary through amendments to the original framework.

A few obvious issues that may come up are listed below:

i) The innovative nature of the changes may produce extremists, who through lack of understanding may give wrong interpretations to key concepts and thereby spread discenchantment with the whole programme;

ii) The demands on the teachers in terms of capacity and time may be too exacting. For instance, lacking constant professional contact required to keep up the necessary motivation, they may relapse into the easier and familiar method of dispensing of knowledge. Again, being already overworked handling large classes, they may find it time-consuming to wade through long-winded teachers' guides or follow extensive pupil evaluation procedures. In either case they would find the programme impracticable and gradually fall back into their accustomed traditional ways of teaching; and

iii) Too much emphasis on integration might well overshadow the important elements in the separate disciplines, especially in the case of basic skill building subject areas such as language and mathematics.

- In rural contexts, the teacher enjoys an autonomous prestigious position as 'the one who knows'. If he feels that his standing in society would be lowered by the demand on him to be only a facilitator of learning, to get the assistance of other adults for the teaching process and to reduce the use of external discipline, he or she may feel threatened and insecure and thereby build up an aversion towards the programme;
- In rural contexts, the teacher enjoys and autonomous prestigious their children, specially in academic subjects. They emphasize these aspects greatly, even going to the extent of subjecting small children to 'private tuition' after school hours; and
- Finally, there are other common problems related to the evaluation of the curriculum in the participating countries. Prominent among them are the vagueness in statement of objectives causing difficulty in developing appropriate evaluation criteria, delay in carrying out the

evaluation, lack of trained curriculum evaluators and inadequate resources.

Try-out and Revision of Integrated Curriculum

In the programme of integrating curriculum development, it is noticeable that almost all countries have undertaken or are in the process of implementing the reforms on a limited scale, in order to allow time for teachers to feel their way and for the material to be experimented with as far as possible. By whatever name one calls them – be they pilot, experimental or laboratory schools – the work goes on slowly and steadily generating confidence in the people who are carving out new ground and lighting up the path for those who will follow. The experience of these first-timers will be valuable as they help to set limits, throw up difficulties and constraints, highlight shortcomings and set patterns of workable procedures.

The designers of the integrated curriculum need to determine how successful the curriculum has been in terms of the performance of each individual learner, in terms of a group of learners in field conditions. For this, individual try-out, group try-out and field try-out are carried out respectively.

For trying out the curriculum, the learners are engaged in the designed learning experiences. Criterion tests are applied to determine whether the learners have attained the objectives or not. The try-out would provide data on the objectives which are attained by all or most or a few or none of the learners. If a large number of learners fail to attain the specified objectives, it is necessary to have a close look at the different components of the curriculum and revise it.

All the participating countries are in the process of field try-out of the integrated curriculum.

In India under the project PECR a detailed scheme has been developed for trying out the integrated curriculum. Teachers are provided with evaluation proformas at the time of the introduction of the integrated curriculum. The teachers are asked to record detailed observations on the proformas. Later on, for pooling the observation of teachers and experience on all the aspects of the integrated curriculum, working group meetings of selected teachers are held. In these meetings all aspects of the curriculum including the instructional materials are analysed and guidelines for improvement of the curriculum and instructional materials are prepared. On the basis of these, the instructional materials are modified.

In Malaysia, strategies and materials for the integrated approach were initially designed and developed based on experiences in six laboratory schools. Subsequently these strategies and materials were tried out in 22 pilot schools and were further revised based on feedback from the try-out.

In the Republic of Korea a massive nationwide level field trial has been undertaken since March 1981. 438 teachers and 25,033 students from 34 elementary schools (three schools from each city and province level and four schools from Seoul, have participated in the trial. Newly developed texts and teachers' guides have been tried out in these schools and the results of the try-out have been collected and analysed with a view to revising the materials in a substantial way. A wide range of data on the developed programmes has been collected through a lot of

different sources such as students, teachers, administrators and subject experts, according to the criteria on evaluating those new programmes. For the collection of data analysis sheets of texts and teacher's guides, classroom observation sheets questionnaires for teachers, students, and parents, interview schedules for subject experts, and tests of basic learning skills and learning achievement were developed and used as research tools. The revision of developed programmes based on the field trial has taken such procedures as collection of data, analysis of data, decision-making on revision, revision of the draft, first deliberation by MOE, second revision and deliberation by MOE, approval and mass production for dissemination. The work for revision has been carried out in close collaboration with MOE.

Systematic try-out of the integrated curriculum was also undertaken in Japan, Nepal, Sri Lanka and Thailand. Following the try-out, the revision and improvement of the curriculum were undertaken in all the participating countries.

Improvement of Instructional Materials and the Curriculum

The try-out of the instructional materials and the curriculum help in making decisions about improving the different components of the curriculum. The kinds of improvement that may be made as a result of the try-out of the materials and instructional strategies are multifarious. The try-out may suggest, for example, that some objectives have to be modified or abandoned. It may indicate the need to design remedial or preparatory learning experiences. Perhaps the sequence of learning activities may need to be modified in order to attain the objectives. Try-out may also indicate the need to revise the teaching strategies because of their inadequacy in leading the children to the attainment of the objectives. Perhaps it may also indicate the inadequacy or appropriateness of the role of the teachers in implementing the curriculum.

The improvement of the curriculum, therefore, is made on the basis of the identification of its strengths and weaknesses in terms of the expected outcomes. Imrovement of the curriculum involves checking back through the earlier phases of its development, identifying and remedying the weaknesses. After modification, the revised curriculum is again evaluated to assess its effectiveness. The procedures involved in the evaluation of the curriculum are discussed in the following chapter.

Chapter V

EVALUATION OF INTEGRATED CURRICULUM

There is a general acceptance in all the countries participating in the Joint Innovative Project that evaluation should form an integral part of the process of development of the integrated curriculum. Curriculum evaluation is the process of systematic collection and analysis of information useful for making judgements and decisions about the effectiveness of a curriculum. Evaluation is envisaged to be a tool to be used in understanding how human groups may be helped to work together in reaching for common goals, not as a symbol for passing judgement or for laying the blame at someone's door. If help is to be offered in order to nip problems or shortcomings in the bud, it goes without argument that evaluation, in addition to its summative function of rounding up any programme, has also to be the formative guiding light that keeps the programme continuously on its straight and often precarious path. In short, evaluation takes cognizance of the fact that 'process' as well as 'product' is important. Reports on the project in integrated curriculum development indicate that all the participating countries have taken or are planning definitive action in this regard.

Purpose of Evaluation

The major purpose of evaluation of the integrated curriculum, therefore, is to gather the kinds of information and data required to assess the adequacy and appropriateness of the objectives of the curriculum, materials developed and the processes involved in curriculum development and to make rational decisions about the adoption, continuance, modification and rejection of the curriculum in a given context. The evaluation of the integrated curriculum involves three major aspects in the development and implementation of it, i.e. objectives, materials and processes.

The evaluation of objectives is aimed at gathering data to determine the extent to which: (i) the objectives are appropriate to the levels of the cognitive, affective and psychomotor learning and development of the learners; (ii) the objectives are achieved; and (iii) the objectives are desirable in a given context. The evaluation of the materials is carried out to assess their effectiveness in attaining the expected learning outcomes by the learners. Process evaluation involves a systematic attempt to gather data and judge the effectiveness of the instructional events and procedures adopted for the development of the curriculum. Process evaluation would deal with the description of the learning experiences provided to the students, kinds of activities planned, kinds of socio-emotional climate within which the activities are conducted, level of satisfaction of learners in the process of learning, organization of classrooms for instruction, group interaction and a variety of other activities

carried out during instruction. It would also assess the extent to which the activities, experiences and interactions are consistent with those presumed or intended by the integrated curriculum plan. Other aspects which are dealt with by the process evaluation are the extent to which the intended interaction between the learners, materials and teachers is facilitated and inhibited and the factors hindering the achievement of the intended outcomes and the like.

Formative Evaluation

Evaluation activities in most of the participating countries are undertaken at every stage of curriculum development and both formative and summative evaluation techniques are used. Formative evaluation of the integrated curriculum is carried out when it is in the process of its development and implementation. Formative evaluation has the primary purpose of improving the ongoing processes in curriculum development, including instructional strategies adopted and learning materials developed on the basis of the attainment of objectives by the learners. It helps to overcome problems or shortcomings in the process of curriculum development. It also helps to keep the curriculum development process in the desired direction.

Although the evaluation of the progress of the learners may be used to pronounce the final verdict on the future of any programme, educational achievement of learners may itself be a function of many other supportive activities, the collective effort of all which results in the success or otherwise of the total programme. All these activities need to be evaluated constantly and cirtically in order to achieve maximum results. For instance, the whole process of inter-related activities calls for constant checking and amendment.

First comes the original statement of the concept of integrated curriculum development as accepted by each country and the pattern of implementation selected as best suited in the context of the country. These two fundamental decisions depend on the scope and in-depth analysis of the base-line data collected in the country as well as on the extent of the study of experiences in other countries. These aspects deserve attentive rescrutiny in any evaluation. Next comes the necessity to look closely at the aims, goals and objectives and see whether they fit best the needs that had been highlighted by the study of the prevailing situation in the country.

The design of the programme in its totality is the next link to be examined in the process of evaluation. It is necessary to study the inter-relationships between its parts for weak points in the links that would block the steady flow of activity towards achieving the final goals.

The process of implementation is the pivotal point that needs the closest scrutiny in an evaluation of the programme. The curriculum development model selected deserves attention first as all subsequent activities would evolve from it.

The next major aspect is the study of the content and the curriculum material produced for introducing it. In the content analysis, some criteria should be set up, not only to ascertain whether they are in line with the goals and objectives but also

to examine whether the concept of integration has been incorporated, particularly the relevance to real-life situations.

In the early stage of developing curriculum materials, it is advisable that formative evaluation in the form of mini-tryout be used. The feedback from this operation will help in the improvement of the materials. In order to obtain comprehensive feedback, teachers, students, parents as well as those who develop the materials should be consulted. Consideration of the concept of integration of the curriculum in relation to the materials and their utilization should also be given priority. The focus should be whether or not the materials facilitate the teaching-learning process in line with the integrated concept.

Simultaneous with this, there should be an evaluation of the methods and procedures adopted in the in-service and pre-service education of teachers, the briefing and orientation given to administrators and supportive professionals.

The last and binding link in the implementation stage is the efficient functioning of the management process of the whole undertaking without which nothing can be achieved. This would involve the persons, teams and organizations that would make up the human component of support to the programme. Their roles, responsibilities and the effective flow of action between them should come into focus for some scrutiny at this stage. Another subject for evaluation here would be the supportive action research activities that have been undertaken to buttress the effort for integrating curricula and also the steady flow of information to all quarters from policy makers to the community at large without which many programmes flounder and come to a dead halt.

One important aspect that deserves special attention in evaluating the processes is the appropriateness of the procedures, strategies, and techniques utilized in formulating objectives, selecting and organizing learning experiences, developing materials, trying out, and evaluating outcomes. The principles stated for each step of curriculum development should serve as criteria of evaluating the processes.

The evaluation of the integrated curriculum also should take into account specifically the following:

a) Freedom of the teachers and the learners to carry out the teaching-learning activities;
b) Use of activities which would develop intellectual, aesthetic and creative abilities and foster social responsibility;
c) Consistency in the use of integrated approach in the classroom as well as outside the classroom;
d) Use of locally available resources for teaching-learning processes;
e) Promotion of leadership qualities among the learners as well as initiative in learning;
f) Promotion of socially useful productive work; and
g) Practice of flexible use of time in the teaching-learning situations.

Summative Evaluation

Summative evaluation is carried out after the curriculum is developed and implemented. One of the major objectives of summative evaluation of the in-

tegrated curriculum is to assess the final products in terms of the expected outcomes or outputs. The major focus of the summative evaluation is on the internal efficiency and external effectiveness or validity of the integrated curriculum. The evaluation of internal efficiency involves a continuous process of checking to ascertain the internal consistencies among the components of the curriculum or tasks involved in the process of its development. Evaluation of external validity is concerned with the assessment of the materials and programmes developed in terms of their utilization and impact in relation to the expected outcomes.

Reports on the project on integrated curriculum carried out by countries participating in the Joint Innovative Project, indicated that all the countries have been engaged in the formative and summative evaluation of the curriculum. In these countries the evaluation of the interated curriculum is carried out as a continuous process with built-in flexibility for appropriate modifications whenever required. The evaluation of the integrated curriculum is undertaken in the formative stage in the curriculum development as well as in the large scale implementation stage to assess whether the curriculum has contributed to the realization of the national goals of education. The teachers involved in the use of the integrated curriculum are also acquainted with the tasks and procedures involved in the evaluation of it. In addition, criterion referenced evaluation techniques are conducted to find out the extent to which the learners are actually progressing towards the expected behavioural outcomes. Norm-referenced evaluation techniques are also adopted to compare the effectiveness of the integrated curriculum as compared to the existing traditional subject-based curriculum.

The current practice in most of the participating countries is to form an evaluation team to carry out the evaluation activities. It should be understood, however, that not only the evaluation team but other personnel such as teachers, supervisors, administrators, parents and community people would have to take part in curriculum evaluation as well. Their roles would be to provide feedback to the curriculum developers, and especially to the evaluation team.

In India, the curriculum and instructional materials prepared under the integrated approach are continuously evaluated by school teachers, supervisory officers, State Primary Curriculum Development Cells and National Council of Educational Research and Training.

Working groups are organized at each level where a two-way process is gone through. Evaluation is done on the basis of feedback and at the same time dissemination of new ideas also takes place. The curriculum and the instructional material are revised and improved on the basis of the discussions.

For summative evaluation, recently a high level committee was appointed which will review the position and recommend the use of curriculum in all the schools.

Evaluation of integrated curriculum in Japan is carried out by individual schools which have adopted the integrated approach. In the experimental project too, evaluation of teaching plans (curriculum) has been made by teachers who participated in the project with assistance from Chiba Education Centre and the National Insitute for Educational Research (NIER).

In Malaysia, formative evaluation was carried out at every stage of the project. This was considered essential and it provided the basis for making modifications in both strategies and material development. Based on feedback from the formative evaluation, the project changed direction from the approach called "Centres of Intent" to the "thematic approach."

Project team members were involved in the designing and data collection of the summative evaluation, while data analysis and interpretation were carried out by external evaluators. The summative evaluation focused attention on an assessment of: (1) teachers' skills and attitudes in implementing the integrated approach; (2) pupils' learning in terms of acquisition of concepts, skills and attitudes; (3) classroom situations with respect to management and organization of learning activities; and (4) the role of the head teachers in determining the degree of success of the project. A number of assessment tools were used including interviews, observation schedules, checklists and achievement and other tests.

In Nepal, the formative evaluation of the curriculum is done with the help of teachers. The draft curriculum is tried out in the schools and is sent back to the Curriculum Textbook and Supervision Development Centre (CTSDC) along with the comments of the teachers for improvement and revision. Based on this, the curriculum is modified and sent to the Curriculum Development and Innovation Committee. After making modifications, if any, it goes to the Curriculum and Textbook Coordinating Committee which consists of educationists, administrators and experts from different fields. After obtaining the approval of this committee, the curriculum is implemented on a wider scale. During the formative evaluation stage, experts from CTSDC, District Education Officers and supervisors supervise the classroom activities, interview the teachers and students, and conduct mini-tests to evaluate the curriculum.

In the Republic of Korea, while developing integrated curriculum, the Korean Educational Development Institute (KEDI) has collected a lot of evaluation data from a wide range of sources. Those data include teachers' analyses of draft curricular materials, opinions from teachers, students and parents, classroom observation data, students' scores of basic learning skill tests and learning achievement tests. All these data have been analysed and utilized to feed back into the revision of draft materials. The impact of the new approach in terms of student achievement is still in the process of analysis and the results are expected to be available soon. Right after the nation-wide implementation, KEDI will conduct a curriculum evaluation project to find out whether there is some discrepancy between the objectives and practices in new approaches. The main focus of the evaluation project is to maintain the integrated programme with quality control. The accumulated results of this project will provide a sound basis for improving the on-going programmes as well as for the next cycle reformation of national curriculum.

In Sri Lanka, the evaluation of the curriculum and the schools programmes is carried out by the Ministry of Education through its field offices. Evaluation of the integrated curricular materials, experimental try-out and implementation at the school level on a limited scale are undertaken by the Curriculum Development Centre (CDC) in Sri Lanka.

The only country in which curriculum evaluation is carried out by other agencies as well as the curriculum development agency is Thailand.

The formative evaluation is conducted by the Curriculum Development Centre. This type of evaluation has been carried out approximately twice a year to cover all primary schools in the country. Financial support has been transferred from the Department of Curriculum and Instructional Development to all Provincial Education Offices so that each can conduct its own follow-up study for all primary schools in that province. This has been done in line with the Curriculum Development Centre's regular follow-up study. The guidelines for evaluation and follow-up have been given to all Provincial Educational Offices but the follow-up schedule depends upon each office's convenience.

The summative evaluation is conducted by the Educational Research and Planning Centre. This type of evaluation has been carried out at the end of each school year by research teams from the Centre using observation, interviews, and testing as means of data collection.

The present primary school curriculum in Thailand has been implemented nation-wide only one grade per year since 1978. Thus, at this writing, the present curriculum has been used in schools only up to grade IV and its strengths and weaknesses have been evaluated by the research teams mentioned above. The 65 pilot schools, however, are using the try-out version of grades V and VI curricula. The summative evaluation done in these schools is to compare their students' achievement with those in ordinary schools which are using the 1960 version of grades V and VI curricula.

The techniques of evaluation used in most of the participating countries are similar. Prominent among the techniques used are the study of written and documented material, sample surveys, personal observations, discussions with professionals, teachers, parents and all others associated with the development of the curriculum, and experimental approach and research studies using scientific techniques. The evaluation instruments commonly used are tests, questionnaires, interviews, checklists and observation schedules.

When the data from a summative evaluation is available and has been studied, there remains the activity of making decisions and following them up. Major changes, amendments in any one of the stages mentioned above may be necessary and the whole process of curriculum development may need to be recycled.

If, however, the results of the evaluation show promising trends, three activities seem necessary. Firstly, the weak points identified by the evaluation exercise at different links in the chain should be strengthened and remedial measures should be taken to rectify mistakes of omission and commission. Next, the subsequent action necessary for further expansion or consolidation of the programme should be designed and put into operation through a continuing phase of curriculum development and implementation. Finally, the successes, the problems and the issues worthy of public attention should be highlighted through dissemination of information both for national and international consumption, using all communication channels available through various forms of mass media.

Strategies for Evaluation of Learning Outcomes

In the case of integrated approach to teaching it is necessary to evolve appropriate strategies for evaluating the learning outcomes. Since integrated teaching involves inter-disciplinary teaching and learning, it requires a different approach as compared to the subject-based approach. Most of the countries participating in the project are still in the process of developing an appropriate strategy for evaluating learning outcomes of learners who have been trained under the integrated curriculum.

In India in classes I and II, oral questioning and observation are the main methods of assessing children's progress in affective and cognitive domains. A record of progress of each child is maintained. Written tests are given only for some aspects of language and mathematics.

In Malaysia, stress is laid on continuous assessment and monitoring of the progress of the learners through systematic correction of their work and keeping a record of their progress. For this purpose different proformas have been developed. Records are kept on the cognitive, affective and psychomotor aspects of the behaviour of the learners. The cognitive aspects include progress in reading, verbal expression, writing, concept learning, numerical ability, and creative writing. The affective aspects include responsibility, co-operativeness, confidence and respect for peers, teachers and elders. The creative aspects include constructive use of leisure time, making use of sources of information and carrying out the tasks without instructions. These are graded by using a five point scale.

In Sri Lanka, the accepted policy is that evaluation at the beginning of the primary level should take the form of continuous assessment only and that formal testing should be introduced in gradual stages as the child reaches the end of the level.

Sri Lanka introduced continuous evaluation of children's progress with the implementation of the integrated programme. Continuous evaluation through observations, structured situations, checklists has been encouraged. Formal tests are minimal in the lower primary grades. The evaluation format has been embodied in a teachers' handbook with instructions for recording children's progress.

One of the reasons for lack of adequate tools for evaluation of learning outcomes is that in the integrated approach, as compared to subject-based teaching, it is necessary to test for the outcomes at the higher level of cognitive processes which requires test items dealing with unfamiliar situations related to the concepts, principles and problems covered during instruction. Another reason is the lack of appropriate tools to assess the performance of children on different community and environment-based activities. A third reason is the difficulty in evaluating the behaviour of children in real-life situations.

However, some of the participating countries are attempting to develop appropriate criterion referenced evaluation strategies for continuous assessment of learning outcomes. For continuous assessment, India uses the 'Minimum Learning Continuum' which specifies the expected learning outcomes in behavioural terms as far as possible.

Thailand has developed a list of instructional objectives stated in behavioural terms, indicating the competencies expected to be attained by the learners. In actual teaching-learning activities, teachers are required to check whether each student meets the minimum requirement by using different means of assessment such as paper pencil tests, observation, and discussion with students. All domains of learning are equally emphasized. Similar attempts are also made in Japan, Nepal and the Republic of Korea, while Sri Lanka is now in the process of refining the expected level of attainment of the primary stage of education, especially in language and mathematics.

CHAPTER VI

SUPPORTIVE SYSTEM FOR CURRICULUM INTEGRATION

It has been commonly accepted that curriculum change should always be the concerted effort of a team of people with various competencies, working towards a common goal. The team actually cuts across the whole educational spectrum and would include policy makers and administrators at one end of the scale right down to the head teachers and classroom teachers at the other. Personnel from support services like textbook writers and research and development officers, and sometimes even parents and the community at large, would also have key roles to play in effecting curriculum change.

A common understanding and acceptance of the philosophy and ideas concerning the curriculum change envisioned by all people concerned are prerequisites to successful initiation, development and implementation of the new integrated curriculum.

In this chapter we shall look at the roles of some of these people and the kind of training programmes that should be afforded to them.

Training of Teachers

As mentioned earlier in Chapter IV, of all the professional personnel involved in the curriculum innovation process, teachers constitute the most important category because they play the key role in determining the quality of learning that takes place in children. The teacher means a variety of things to children in the process of education. He is a source of information, a facilitator of learning, a person who imparts knowledge, a representative of the society, a model of identification, a builder of children's ego, a person who evaluates children's work, a reference to settle children's disputes, and so on. With all these roles from which he cannot escape, the teacher has a very important responsibility to perform as a curriculum maker in action.

No matter what curriculum change approach a country may take, centralized or otherwise, it is the teacher who really makes the curriculum work in action. In this sense, it is the teacher, not any higher policy maker, who makes the final decision on curriculum change. An important consideration, therefore, is the training of teachers for this change.

1. Pre-service teacher education programmes

A teacher training college or an institute of education can be looked upon as a service agency catering for the manpower needs of schools. The scope and extent of the teacher education curriculum, therefore, should reflect the kind of knowledge

competencies and attitudes the schools require of the teachers. It is necessary, therefore, for student teachers to acquire some of these basic competencies before they start their teaching career. For example, in the college course of study under "Principles of education", it would be desirable to include, among other topics, a detailed treatment of the philosophy, principles and rationale of the integrated curriculum and the integrated approach to primary education. The section on "Pedagogy" should cover aspects of classroom organization and teaching and learning strategies related to the integrated approach.

When it comes to the actual training programme, it may even be necessary first of all to orientate teacher educators to the change. One way would be to involve the staff of teacher training institutions during all stages of planning and development of the integrated curriculum as is being done in India. This type of involvement helps to plough back the methods and strategies of effective integration into the pre-service teacher training programme. Visits to pilot schools and informal discussions with Ministry of Education officials involved in the project, as carried out by Sri Lanka, is another strategy that may be considered.

Training programmes for student teachers can be varied, ranging from more exposure to principles and concepts to complete units of studies based on the integrated approach. In India, for example, student teachers in their two-year training programme are not only introduced to the idea of integration of curriculum but are also trained in developing lesson plans on the basis of integration of subjects. They actually give demonstration lessons before more experienced teachers.

In countries where the integrated curriculum has already been introduced in the schools, it would also be possible to expose student teachers to current practices by posting them to such schools during off-campus teaching practice. This has been carried out in Sri Lanka and Thailand. Student teachers can also be exposed to teaching strategies and to acquire the necessary skills through simulation exercises and micro-teaching sessions in the college itself. Japan generates interest in its project by encouraging student teachers in local teachers' colleges to carry out experimental studies on the integrated approach in schools attached to the colleges. Students visit such schools to get an idea of the integrated curriculum, to observe actual classroom teaching using the integrated approach, and sometimes to experience actually the integrated approach under the quidance of a teacher trainer.

The support system provided by teachers' colleges and institutes of education should be viewed as a two-way process. It is not only the teacher education institutions that can help the schools in the output of teachers; the schools in their turn can provide experienced resource personnel to the institutes to help them in their teacher preparation programmes.

In a centrally-administered system of education, it would also be possible to determine the number of teachers required in implementing the integrated curriculum and to map out a long-term teacher preparation programme involving all teacher education institutions in the country.

2. **In-service teacher education programmes**

A proper reorientation of teachers' attitudes towards the integrated curriculum is important. In traditional societies the autonomy of the teacher and the authori-

tarian classroom climate are taken as a *sine-qua-non* of good discipline and learning. In contrast, real, totally merged integration of subject areas can take place only through discovery and self-directed learning. Therefore since the methods of learning and teaching have perforce to be changed if integration is our aim, then the in-group manpower component, i.e. classroom teachers, have to be initiated into new ways of behaviour in addition to upgrading their professional knowledge of subject content. This involves without doubt a radically innovative approach to in-service training of teachers. An effective retraining and orientation programme must be drawn up, otherwise attempts to change teachers' attitudes and their long-held convictions about teacher-pupil relationships may result in reactions of mental block and defence mechanisms.

This aspect is so crucial that, as was done in Sri Lanka and Malaysia, it may be necessary even to set up informal discussion groups specially for initiating healthy dialogue even before the project is implemented. This gives the project administrators the added advantage of being able to identify and attach good practising primary-level teachers and teacher educators with potential for innovative thinking to the project so that the mixed approach in curriculum development may be used with a greater loading of grassroots level personnel.

In all countries participating in the project, the strategy adopted is to orientate teachers to the integrated approach through various types of in-service programmes. The nature of the programmes may vary from one country to another depending on the extent of integration that has been carried out and on the stage of development the country is in as far as the implementation of the integrated curriculum is concerned. Various seminars and workshops at national, state and school levels have been organized by participating member countries.

Generally, these orientation programmes, seminars and workshops, and informal meetings are held for the purpose of carrying out one or more of the following activities:

- Exposure to the concepts, principles and rationale of the integrated curriculum and the integrated approach;
- Preparation and/or revision of resource materials like teachers' guides, handbooks, guidelines, pupils' workbooks;
- Production of various kinds of audio-visual hard-ware and software using improvised and low-cost materials freely available in the environment. In this respect, the stress should also be on the production of teaching–learning materials which are multipurpose, thus resulting in their maximum utilization in the classroom;
- Demonstration of teaching, using the integrated approach;
- Formulation of objectives for learning units and preparation of lesson plans; and
- Visits to pilot schools.

These seminars and workshops are usually conducted by field supervisors, project team members, lecturers in teachers' colleges, practising teachers and headmasters, key personnel and other resource persons.

It must be stressed that seminars, workshops and other orientation programmes carried out for the purpose of exposing teachers to the integrated approach should be an on-going activity and should be continued even after the project has been firmly established in the schools, and existing teachers' colleges take over the formal training programme of teachers. From the country reports, it was evident that member countries found such seminars and workshops to be most valuable in enabling teachers to synthesize their experiences, to discuss common problems and to find solutions to them.

Role of Administrators at Different Levels and Their Training

Looking at the educational spectrum, the term 'administrators' would comprise the head teacher at the grassroots level at one end of the scale right up to the director-general of education and other top officials of the Ministry of Education at the other. The administrator is often considered as the prime mover of educational innovation in general and of curriculum change in particular. It is particularly so where major curricular policies are decided at the central administrative level, as practised in most countries in the region.

In many countries participating in APEID activities, the administrators' roles are considered to be as agents of change, as executives who motivate people, as advisors on educational matters, as adjudicators, as implementors and evaluators of curriculum, as policy interpreters, as demonstrators of new skills, and as innovators in their own right.

As far as the integrated curriculum project is concerned, the administrators can be grouped under the three broad headings of (a) policy makers; (b) monitoring officials; and (c) supervisors.

The policy makers constitute the top officials of the Ministry of Education who would be responsible for making key decisions related to the project. For example, the decision to commence a pilot project or to effect nationwide implementation of a project already tried out would be made by this category of administrators.

Coming down the educational ladder, the monitoring agency would usually be a division or department of the Ministry of Education entrusted with the responsibility of implementing and monitoring all aspects of the project. As pointed out earlier, in most participating countries, this agency would be the Curriculum Development Centre of the Ministry of Education or a division designated by some other name. The function of this agency would be to map out the strategies for implementation of the project, be it experimental or otherwise, and to identify the various personnel involved and formulate job descriptions for them.

The third level of administrators are those nearer to the ground and include officials like state or district education officers, project team members, resource persons, school departmental heads and head teachers. The functions of these officers would be to supervise the actual operation of the project at grassroots level and to ensure its smooth implementation. At this level a fair amount of decentralization of administration is obviously necessary in order to ensure effective supervision of the project.

It must be stressed that categorization of administrators into these three broad headings is artificial and when it comes to actual performance of duties, we will find that an administrator may play different roles at different times.

It is obvious that if any change is to take place in the educational system, the administrators themselves, especially the policy-makers, must be convinced first of all of the goodness of the change and of its relevance to the national education system. When this happens, then it can be assumed that the process of getting the necessary support in terms of manpower and material needs will be greatly facilitated and expedited. It is essential, of course, for the administrators to be exposed to current trends and practices related to any innovation. This exposure can be effected within the country itself or through attendance at international seminars and conferences. Such exposures are very essential, if we are to reduce the danger of an administrator adopting an innovative project just for the sake of jumping onto the latest educational bandwagon.

Officers from the monitoring and supervisory agencies should also be given the opportunity of familiarizing themselves with current trends and practices related to the project.

As an added incentive to such officers, it may be necessary to offer them scholarships or government grants to enable them to attend postgraduate courses related to the project within the country as well as overseas. Through such courses, they will be able to update their knowledge as well as increase their competencies in the field.

Direct involvement in the project can be considered as on-the-spot in-service education for most levels of administrators. This helps to give the added impetus to the project. Sri Lanka, for example, has adopted the practice of inviting administrators functioning in supervisory capacities as observers to in-service teacher education programmes so that their understanding of the innovation would be heightened, resulting in greater professional support to schools.

Facilitating the Schools' Capacity for Innovation

It is obvious that in most Asian countries where education is centrally administered, there will be numerous factors and agents working to either hinder or facilitate the schools's capacity for innovation. These agents would either be professionals from various sectors of the educational system or non-professionals like parents and community leaders. At the school level, the head teacher and the teachers themselves constitute the more important group that can contribute towards innovation.

There are a number of factors which must be considered when we talk of the schools' capacity for innovation. It is essential, for example, for teachers to be clear about where they are heading. Goals set must be achievable, bearing in mind local needs and available environmental resources.

Equally important is the adequacy of communication existing within and outside the school. There must be a free flow of information vertically as well as horizontally amongst teachers, head teachers and administrators, and between tea-

chers and pupils. In an 'open' organization such as this, problems are likely to be solved with minimal energy; they stay solved, and the problem-solving mechanisms used will not be weakened but maintained or strengthened.

Related to this is the morale of the school. Schools characterized by openness and trust tend to create a psychological climate favouring change and innovation. This situation is likely to exist when there is a sense of belonging amongst members of the school and other professionals outside it. Sri Lanka, for example, found this to be the tone of its primary schools.

The ability and willingness to adapt to changing needs in the environment is another contributory factor facilitating the school's capacity for innovation. This was reported to be true by most countries participating in the project. Malaysia, for example, found that an interested and supportive headteacher, who is open and willing to try out new approaches, makes a world of difference to the work of teachers and to the learning experiences of pupils in the school. The same may be said for relationships between the head teacher and other supervisors and administrators outside the school.

Experimental school systems may also facilitate the school's capacity for innovation. In the case of Japan, the Ministry of Education as well as local boards of education adopt designated experimental school systems on specific themes which need study for innovation and changes. The integrated curriculum is one of these specific themes which need study for innovation and changes. The integrated curriculum is one of these specific themes and several schools are being designated as experimental schools for curriculum integration.

No matter how rigid a centralized system might be, it is essential for schools to be given a fair amount of autonomy in carrying out, if not all, at least some of its activities. Most countries reported this to be one of the factors contributing to the success of their projects.

In addition to the factors summarized above, we may also consider teacher incentives as an important criterion which can contribute to innovation. We are not referring to remunerative incentives here (though this could well be one) but rather to the kind of professional help the school can offer that will facilitate the teacher in his innovative activities. An administrative system that is sensitive to the needs of the teacher can give added impetus to curriculum change.

Incentives can be given to teachers in the form of professional support. For example, study visits in and outside the country can be arranged for innovative classroom teachers to increase their awareness of what is possible. Teachers granted study leave from schools may be enthused to visit other schools wheere imaginative handling of materials and methods has made the programme a pleasurable experience for all concerned. This will in turn be a source of appreciation and encouragement to many a hardworking teacher, plodding away in his nook or corner of the country, often unsung and unheard. Visits abroad, if they can be arranged specially in teams, are another valuable source for gathering fresh ideas to be tried out at home. In India, good teachers from the Project Schools are identified and given recognition in the form of state awards.

Professional and Material Support

If teachers are to play an effective part in the successful implementation of the integrated curriculum, it is essential that they be provided with various kinds of material resources. One category of material resources comprises syllabuses, general guidelines, workbooks and teachers' guides or handbooks as well as supplementary resource materials such as learning kits teaching aids, supplementary readers or reference literature. It is not only essential to prepare such materials but also to ensure that they are available in sufficient quantities for use by all who would be involved in the implementation programme. Guidebooks and supplementary resource materials specifically produced for the project would constitute the most valuable source of reference for teachers, especially those in the rural areas. Sri Lanka, for example, has produced a number of guidebooks including one on remedial teaching. India has produced guides on evaluation techniques, teaching strategies and on sample test items. Malaysia produced four guidebooks on aspects related to storage and distribution of materials, classroom arrangement, record-keeping of children's progress and group work in teaching and learning.

Learning, both formal and informal, takes place within and outside the classroom. In the school and classroom context, the teacher plays a salient role in facilitating learning. An important consideration is the creation of a conducive learning environment through the organization or reorganization of classroom space, furniture and learning activities that encourage active pupil participation. It is important, therefore, that due consideration be also given to the production and distribution of other support materials like prototype book racks and shelves. For example the Curriculum Development Centre in Malaysia has produced wall pockets for the storage and display of workcards and activity cards, pupil booths for individual activity and prototype round-tables for group activity. These have been successfully tried out in the project schools.

Another kind of help already discussed includes the provision of support facilities like libraries, resource centres and teachers' centres. Professionals at tertiary level of the national educational system can also help. A point worthy of note as mentioned by Japan is the involvement of university professors and other personnel from local universities in the development and tryout of the integrated approach. Another source of support as mentioned earlier in this chapter are lecturers from teachers' colleges. The link here with the schools is even closer in view of the fact that colleges need to send their student teachers to the schools for practical teaching. Educational radio and television and other forms of mass media can also help in the development and implementation of the integrated curriculum and other innovative projects. In the Republic of Korea, for example, a wide range of mass media such as periodicals, newspapers, television and radio are utilized to disseminate information to professionals as well as the general public.

Role of Other Personnel

There are also a number of people and outside agencies that can help in and contribute towards the successful implementation of the integrated curriculum.

a) Parents: Parents can help to complement the teachers' task of developing

the learning capacities of their children. Their solid support and encouragement adds much to what a school may maximally achieve. They can help the school not only in money or in kind but also through their valuable service. As far as the hard task of teaching integrated subject content is concerned, it is inevitable that the teacher may feel inadequate in many areas of subject matter, especially as it needs to be drawn from the local context in order to increase relevance. The parent – be he a farmer or a vegetable vendor – has a crucial role to play in education as he describes his job and enters into discussion with the children of his child's class. This role would even be more important than supplying material support to the school as it would satisfy both parties – the children gathering information at the source and the parent himself gaining prestige and acceptance in the school and thereby redeeming his own self-esteem. Such opportunities could further be used by the school to obtain and retain parental support to the change in the teaching and learning procedures.

Having said that, it is perhaps necessary to warn teachers and administrators alike of the danger of assuming that all parents would be co-operative and enthusiastic towards the new curriculum. Suffice it to say that there may be parents who will even question the relevance of such an innovative approach. In the case of Japan, for example, parents' conservative attitudes towards school education for their children sometimes hamper the implementation of the integrated approach in the schools. Sri Lanka, too, experienced such resistance during the initial stages of its programme, but through the mass media and the showing of films, the Ministry of Education was able to win parents over and change their negative attitude towards the project.

b) **Local and national communities:** Another source that may be tapped for the much needed support to schools attempting innovations often under trying conditions is the immediate local community whose good relationship with the school may earn the latter much material support. If approached amiably and given enough recognition, the local well-to-do citizens have been known to help generously and act as godfathers to the little schools in their own villages. Personal contact with the donors and ready acknowledgement of their generousity are easy means to loosen their purse strings in the service of the school.

Next in line is the support for educational innovations at the national level. Education is a subject on which opinions are freely expressed and these, moreover, generally lead to statements which proclaim that the education enjoyed by the speakers themselves was, despite all innovations, as yet unbeatable in quality. This argument is then taken to its logical conclusion that innovative measures are really counter-productive. In such circumstances, it is imperative that before such misconceptions can take root, counter-arguments are trotted out early enough in anticipation of what will surely follow the introduction of the innovation. For this purpose, as many media as possible should be used so that a wide coverage may be given to a statement of the real situation, buttressed by objective facts and figures.

In this respect, Japan has experienced the need for retraining and reorientation of local education officers and teacher consultants in the innovative approach. Per-

sonnel at the tertiary level like university professors and teacher training college instructors who have been exposed to such innovative practices could well provide the impetus for curriculum integration.

Chapter VII

RESEARCH AND DEVELOPMENT IN CURRICULUM INTEGRATION

Introduction

Research and extension work provide sustenance to any innovative project. This is a fact that emerges from the variety of experiences reported by the countries in their attempts to integrate subject areas in the curriculum at the primary level.

It is also evident from the experience of all participating countries that research has to be built-in at every stage of new projects in order that the continuous awareness of the on-going situation would result in taking realistic measures. How difficult this ideal is in terms of actual implementation becomes obvious when one considers a country like India where many different populations—culturally, geographically and linguistically – have to be welded together by common national feeling. Research in such a situation has to be conducted in a decentralized way to suit the varying backgrounds under consideration.

In the case of the special topic of integrated studies, the problem is further compounded by the fact that a totally new approach is envisaged and, therefore, one has to keep vigorous check that the basic educational objectives of knowing, feeling and doing in terms of total development of children are all being achieved. In this case, research becomes not only relevant but absolutely necessary as a device for ensuring this total development, especially because of the fact that some of these objectives could run the risks of becoming overshadowed or fading out of the picture on account of learning experiences being 'integrated'.

An important aspect worth considering in undertaking research is the question of who should be involved in research. When research is to be used specially to improve action programmes in education, there is a good case, if only for its utility value, in employing practising teachers as partners under the guidance of experienced researchers. In developing countries where finances are hard to come by, this is an absolute necessity and could be used very effectively. This is because in addition to other factors, research done by the users themselves will surely lead to recommendations that are at least down-to-earth and workable. Undertaking such research activities has the added advantage of developing the capacities of teachers and other grassroots level workers to be inquiry-oriented, as was demonstrated in the case of India and Sri Lanka.

In undertaking research activities there should be an openness in selecting the types and modes of research to suit the purpose for which they are intended. These types may be full-scale operations with controlled and uncontrolled groups, library

and desk research, surveys for broader coverage using questionnaires and check lists, long-term in-depth probings through observation down to the level of participation, longitudinal studies or even on-the-spot inquiries to find answers to minor specific problems.

Types of Research

The following are the types of research which have been undertaken in the participating countries:

1. **Basic research**

An area of basic research that is very relevant to developing an integrated curriculum is that of identifying the levels and processes in the development of concepts in children. Such studies could be used profitably to develop graded activities suitable to the age levels of the children in order that those pertaining to each level may be integrated together. This type of research has been found to be very effective in developing the integrated programmes in most of the countries. Other aspects that may be studied for use in implementing an integrated curriculum could be as follows:

a) Establishment of developmental norms;
b) Methods for increasing the vocabulary content for different age and grade levels as a base in writing material for learners;
c) Sociological and historical trends and predictions from them; and
d) Values and beliefs that may help or hinder implementation of innovations.

2. **Action-oriented research**

Although support for introducing integrated curriculum development may be drawn from possible basic research studies as indicated above, specific attempts at research and inquiries directed at finding solutions to pressing problems become necessary as activities are being undertaken.

In addition another requirement seems to be the efficient dissemination of information about the solutions so identified in order that co-workers in similar situations may profit from this knowledge.

The following are some action oriented research areas, which have been undertaken in the participating countries:

a) **Preliminary inquiries**

In the preliminary stages even before initiating the project proper, some inquiries have to be made and information gathered in order to make the initial decisions. India has undertaken a detailed socio-economic and educational survey including the cultural and geographical aspects. This has enabled the planners and educational administrators to understand more fully the context in which the developments are to be made on the one hand and the preparation of instructional materials and strategies on the other. The Republic of Korea, through meetings, has provided a forum for researchers and specialists to give thought to curriculum policy, and needs of society, learners and subject-matter. Thailand has done a nationwide needs assessment from which the needs and problems found in the

daily lives of the learners have been identified and grouped into four areas of learning experiences (in accordance with their characteristics).

Identification of relevant themes to be included in the integrated curriculum has been the common concern of almost all the countries.

b) **Instructional materials**

Research of some sort or another has been again a common feature in the development of instructional materials in terms of such aspects as scope, level, and relevance. Currently Nepal exhibits a concern both for identifying the minimum amount and type of instructional materials that it should provide to its schools and for surveying the use of textbooks by teachers in that country. Research on other instructional materials such as a broadcasting programme for the integrated curriculum is also being conducted in various countries. For example, Japan conducted a study on TV programmes for its integrated approach through several experimental schools.

c) **Instructional strategies**

Almost all the participating countries are greatly concerned with the question of how best to integrate subject matter and are pursuing this as a continuous inquiry with the idea of improving the quality of primary education. Special cases requiring classroom control and strategy such as multigraded small schools in Sri Lanka and Thailand or large classes in Korea or even special arrangements such as double shift schools in India and Malaysia are further pointers that call for research of a specific type. In India and Sri Lanka, surveying and using the environmental resources, specially the natural surroundings as outdoor laboratories and making and using low-cost equipment by teachers, have also been subjects for useful research activities, the results of which have certainly enhanced the effects of an integrated curriculum.

d) **Training of teachers**

In implementing an integrated curriculum, whatever the integration effected through fusion of subject content or creative teaching, one of the crucial components that can either make or break the whole effort is the teacher competency and commitment. Motivation and adequate training of teachers to make the extra effort required for integrated work has been found to be absolutely necessary. Every country is deploying much of its resources towards this end and specific attempts at even developing training packages have been made by India. In this context, Japan's attempts at training teachers to teach creatively may well be emulated by other countries too.

e) **Evaluation of learning**

Competency-based criterion-referenced pupil evaluation is the goal towards which all the countries seek to move. Tools and methods for this are the special concern of Korea. India's attempt at developing a minimum learning continuum to identify stages of attainment at both state and national levels goes a long way in helping teachers to keep a check on how much they have been able to achieve with students in linking education content and process to the life needs of the children. Development of such bench marks is also the concern of Japan and Sri Lanka.

Thailand has identified a number of instructional objectives stated in behavioural terms for each grade and each area of learning experience. These objectives lead to tasks which the students must satisfactorily complete (at least 80% in each grade) in order that the objectives may be considered as achieved.

f) **The curriculum process**

While the curriculum content and its evaluation is given its due share of prominence in the area of research, the process of implementing it should not be relegated to the background. No curriculum will ever be put into effect unless all the persons and processes are geared towards doing so. The roles and responsibilities of all persons should be analysed not in isolation but in terms of an interrelated network of operations. The management process which makes integration a reality in the classroom involves many individuals and is very complicated. This has been one of the concerns in the Republic of Korea. Institutional and administrative support, back-up operations involving disbursement of funds, logistics of distribution of material and equipment, and accounting procedures are further aspects that need streamlining as they include activities involving human relationships. Finally, supervisory and monitoring functions too, which India has studied extensively, indicate the procedures and methods which can be used in ensuring the success of implementing curriculum integration.

g) **Support systems**

Although not related directly to the curriculum process, there is much in the area of extension work that gives solid support in a new venture of this type. Research into the question of buildings, equipment and sufficient storage facilities could result in new ideas which might be more economical for use. The laboratory and pilot school system used in Malaysia as a two-tiered structure for testing new inputs is a device that might be tried out in other countries too. The textbook project tried out in Nepal is a necessary extension effort in the implementation of the project. Sri Lanka has attempted to develop special teachers' guides for remedial teaching in language as a response to a need strongly felt by the schools.

In order to help large numbers of untrained teachers whose academic qualifications are below the nomally accepted levels, Nepal is studying the problem of developing supplementary material for use by teachers while India has already developed guidelines for both preparation and use of textbooks and for their evaluation.

Methods of staff organization, participation of personnel, use of mass media, the suitability of group and individual work in various types of class activities, the size of groups for optimal effectiveness, interaction within and between groups, peer learning v. teacher-directed learning, communication strategies for winning the support and commitment of teachers as well as other personnel, are other necessary aspects of the support system that will continue to draw the attention of researchers and innovators.

Future Needs

A number of other areas both within the scope of developing the curriculum itself and outside it but providing essential support, could further be studied as

relevant to each country. How best to proceed with wider dissemination of ideas and practices could be a topic worth considering in view of the fact that face-to-face communication with thousands of teachers poses a massive problem to innovators the world over. Another question that may be studied is how we could bridge the gap between the primary level using an integrated curriculum and the subject discipline-oriented secondary level.

In countries where integration catches on fast at the primary level, it may even be useful to explore the possibility of extending it to the junior secondary level and beyond. Comparative studies involving schools using integrated methods and subject-based curricula may be another area for investigation. As India has done, learning difficulties of children from different backgrounds could also be studied in order to provide for remedial measures. It may be profitable too to look into methods of communication and community participation (especially in the context of integrated rural development programmes) for evolving strategies and strengthening all links in the chain. The process of curriculum development itself according to the changing needs of society poses a challenge worth studying. The school and classroom climate most conducive to integrated teaching and development of school profiles including all aspects regarding each school could be other areas which are relevant for researchers to investigate.

Finally, inter-country studies in the Asian context such as the one undertaken by Korea in relation to curriculum development would provide a wealth of material as a basis for sharing of experiences and generating concerted effort towards improving the quality of education for our children.

Chapter VIII

FUTURE PERSPECTIVES

Introduction

The participating countries are at different stages in the implementation of the integrated approach in their primary schools. All the countries have formulated future plans and procedures irrespective of the stage of experimentation or implementation at present.

Gradewise expansion, quantitative expansion in the number of trial schools, nationwide implementation at different grade levels, qualitative improvement of the curricular content, methods and approaches are reflected in the country plans for future development.

Widening of field trials is an outstanding feature of the plans for 1982. India has completed a large-scale field trial of grade I and II materials. Japan plans to extend the trials to all the schools in one prefecture. Malaysia is completing its second cycle of field trials for the first three grades by the end of 1981. Nepal is planning wider diffusion of grade I material. Thailand will extend its field trials to a larger number of schools depending on the effectiveness of the experimentation with understaffed primary schools in terms of helping the teachers and students of these schools.

Gradewise expansion is another feature. Most of the countries who are experimenting with material for one grade are planning field trials for the subsequent grade in 1982. In India the curricular material for grade III will be tested in 1982. India is planning to complete the field trials up to grade V by 1985. The Republic of Korea will investigate the possibility of expanding the integrated approach to upper primary grades by doing a pilot try-out of selected topics in these grades. For the next stage of development of the integrated curriculum, Thailand has planned across-grade level experimentation at all grades. Sri Lanka which has already implemented the integrated approach will concentrate on enriching the existing programme, in view of the needs as surfaced through evaluation and research studies. The first phase (1982-83) will be to enrich the lower primary and multigrade small rural school programmes, and to evaluate the upper primary implementation.

Nationwide implementation in all primary grades is the objective of all the countries. In some countries, as in India, there is great interest in the integrated approach, and this new approach has been recommended for adoption by important education committees in the country. In Malaysia, phased-out nationwide implementation of the new curriculum will begin by 1983. The Republic of Korea is planning for nationwide implementation in 1982 in grades I and II.

Even in the countries where nationwide implementation is not taking place in 1982, the experimental trials have already made an impact on the existing primary education programmes. In Malaysia, the salient features of the project such as the thematic approach has already been incorporated into the new primary school curriculum. In Sri Lanka, the Reforms for Education – 1981, embodied in the White Paper, reiterated the relevance of the integrated approach at the primary level.

Attempts towards qualitative expansion of the integrated approach are being made in several countries. India is attempting to experiment with different forms and degrees of integration among subject areas. In the Republic of Korea, qualitative differences as well as qualitative improvement are expected in the course of actual implementation in 1982 in different school settings in the country. In Thailand experiments in the across grade teaching will cover all subject areas. Sri Lanka is concentrating on the qualitative improvement of the existing curriculum material with special emphasis on teaching in rural, small multigraded schools. These in effect are processes towards the multi-facet integrated approach.

Future development of the integrated project is very much dependent on research studies. Ongoing research activities point to the need for vigilance, critical examining and reviewing of the projects in each country. Experimental and research activities not only help to evaluate the need for changes, and examine the curricular material and methods of implementtation, but also help in disseminating information based on organized evidence. Reports of follow-up studies, as in Japan, help to disseminate the relevance of the integrated approach. Certain research studies like comparing the achievements of children in the classrooms adopting the integrated curriculum and the traditional curriculum, as proposed by India, will help to break down the suspicion and fear of the new approach. The curriculum evaluation, including its shortcomings, as proposed by the Republic of Korea, will help in planning for nationwide implementation as well as gradewise expansion. Research on the relevance of textbooks in Nepal would be a base for implementing a new approach. The findings of strategies or the efficacy of the in-service programmes in Sri Lanka is helping the CDC team to re-formulate guidelines for in-service education. The insights gained from research studies help to establish directions for the future.

The need to revitalize primary education has been felt for some time in all the countries. The integrated approach has provided new directions for this.

Future Directions and Implications for APEID

The Joint Innovative Project has initiated a series of activities and enthused the participating countries to carry out the activities. These activities have followed each other in quick succession. These must take root over a period of time and the progress should be reviewed periodically.

Since most of the countries have been concentrating on curriculum innovation at the primary level, it would be worthwhile to expore new directions, while this is being stabilized and expanded. These are, for example, studies of across-grade teaching in understaffed, rural, multi-grade schools and teaching in crowded classrooms.

In addition to the above, it would be advisable for the countries participating in APEID and other national and international agencies concerned with the project such as the Ministry of Education and Unesco to co-operate in providing support and services in facilitating the project. The following are some areas of needed assistance:

1. Information Flow
   a) Service for translating into English and duplicating relevant curriculum materials selected in the project;
   b) Documentation service to communicate information regarding country projects among the participating countries.
2. Development of Personnel
   a) Inter-country workshops for further exchange of experiences on curriculum development;
   b) Study visits, inter-country exchange programmes and sharing of expertise;
   c) Short internship for curriculum development and research workers at selected centres.
3. Development of Materials
   a) Development of instructional materials;
   b) Dissemination of sample materials.
4. Research Activities
   a) Circulation of abstracts of research papers done in participating countries and elsewhere;
   b) Material or financial assistance to carry out a selected research programme;
   c) Development and conduct of comparative and parallel research studies.

Annex 1

STATUS OF PROJECTS ON INTEGRATING SUBJECT AREAS IN PRIMARY EDUCATION CURRICULUM

NAME OF COUNTRY	SCOPE AND PROGRAMMES		FORMS OF INTEGRATION				APPROACHES TO DEVELOPMENT			STARTING YEAR OF EACH STAGE			FUTURE PLAN
	GRADE	LIST OF INTEGRATED PROGRAMMES	TOTAL INTEGRATION	BROAD FIELDS	THEMES AND PROJECTS	INTERESTS AND CONCERNS	CENTRALIZED	DECENTRALIZED	MIXED (RID)	EXPERIMENT (PILOT STUDY)	DEVELOPMENT	IMPLEMENTATION	SOME MAJOR ACTIVITY TO BE DONE
REP. OF KOREA	1-2	We are the first grades Daily Life Inquiring Life Pleasant Life	X			X X			X	1974	1980-81	1982	Nation Wide Implementation In-service Teacher Training Curriculum Evaluation Research on Integrated Curr. At upper Gr. Level
	3-6	Science, Social Studies		X		X		X					
SRI LANKA	Kinder garten A 1-5	Our homes and people who live in them What we eat and drink Things we wear Things which help our work Unity through diversity (living in mixed communities) The world around us Our school and its neighbourhood People who help us How we travel and communicate Our earth and the sky above Things we see and hear	X Kinder-garten			X	Curriculum development centralized Flexibility in implementing at regional level emphasized			1973 Pilot Study in Gr. 1	1973-77 Pilot study and development One grade each year	1974 to date	Qualitative improvement of the present integrated programme Supporting research Small rural schools and the integrated programme
THAILAND	1-2 Units 1-3 3-4 Units 1-81 5-6 Units 1-171	**Life Experiences** (12 units) 1. Living Organisms 2. Family Life 3. Environment Around Us 4. Our Country 5. News, Events and Important days 6. Occupation 7. Energy and Chemical Substances 8. Universe and Space 9. Transportation and Communication 10. Our Neighbouring Countries 11. Population Education 12. Politics and Government								1976	1977	1978	Qualitative revision of the present curriculum
	1-2	**Character Development and Work Oriented Education** (3 units) 1. We help Ourselves 2. We help our Parents 3. We live with others			OTHER Thematic approach cutting across grade levels					1961			Expansion of the present experimental project in terms of areas of subject matter and numbers of grade levels to be integrated

*Information given in this chart is for all those related to the Joint Innovative Project and does not give full view of integrated curriculum in Japan as a whole.

Annex

STATUS OF PROJECTS ON INTEGRATING SUBJECT AREAS IN PRIMARY EDUCATION CURRICULUM

NAME OF COUNTRY	SCOPE AND PROGRAMMES		FORMS OF INTEGRATION				APPROACHES TO DEVELOPMENT			STARTING YEAR OF EACH STAGE			FUTURE PLAN
	GRADE	LIST OF INTEGRATED PROGRAMMES	TOTAL INTEGRATION	BROAD FIELDS	THEMES AND PROJECTS	INTERESTS AND CONCERNS	CENTRALIZED	DECENTRALIZED	MIXED (RID)	EXPERIMENT (PILOT STUDY)	DEVELOPMENT	IMPLEMENTATION	SOME MAJOR ACTIVITY TO BE DONE
INDIA	I-V	Science, Social Studies, Environmental Studies		X						1976 and every year	1981		Full cycle experiment Supporting Research
	I-V	Our family, our needs, our school, our Neighbourhood, our earth, our sky, our State, our country, our universe	X		X			X					
		Correspondence access to Primary Edn.				X							
JAPAN*	I	Integrated Unit of Science, Social Studies, Japanese Language, Music, Arts and Handicrafts, Physical Edn. Moral Education				X			X	1980			Continuation of experiment project in Chiba Pref.
MALAYSIA		The 4 subjects, Local Studies, Health Education, Art & Craft and Science have been integrated through the use of 12 themes			X X				X	1975	1981	1983-Gr. I 1984-Gr. II 1985-Gr. III	Continuation of present experimental project
	I	My home and my family Our food, drinks and our clothing Things that help us do our work My school and its immediate environment			X X								
	II	Our needs in our everyday living Our Public Services The environment around us The school and its surroundings											
	III	A study of the school and its environment A study of people who help to make our life comfortable Knowing and respecting our local festivals and celebrations A study and appreciation of local history											
NEPAL	I-V	The child and his environment Human and Social Aspects Physical Aspects Cultural Aspects Natural Aspects	X		X		X			1979			Extension of present tryout programme. Field Testing of Gr. II. Development of Gr. II-III Materials. Some related studies.

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APEID PUBLICATIONS RELATED TO CURRICULUM DEVELOPMENT

Unesco, P.O. Box 1425, General Post Office, Bangkok 10500, Thailand

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* Out of stock

The Asian Programme of Educational Innovation for Development (APEID) has as its primary goal to contribute to the building of national capabilities for undertaking educational innovations linked to the problems of national development, thereby improving the quality of life of the people in the Member States.

All projects and activities within the framework of APEID are designed, developed and implemented co-operatively by the participating Member States through over one hundred national centres which they have associated for this purpose with APEID.

The 21 countries in Asia and the Pacific participating in APEID are: Afghanistan, Australia, Bangladesh, China, India, Indonesia, Iran, Japan, Lao People's Democratic Republic, Malaysia, Maldives, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Singapore, Socialist Republic of Viet Nam, Sri Lanka and Thailand.

Each country has set up a National Development Group (NDG) to identify and support educational innovations for development within the country and facilitate exchange between countries.

The Asian Centre of Educational Innovation for Development (ACEID), an integral part of the Unesco Regional Office for Education in Asia and the Pacific in Bangkok, co-ordinates the activities under APEID and assists the Associated Centres (AC) in carrying them out.

The eight programme areas under which the APEID activities are organized during the third cycle (1982-1986) are:

1. Universalization of education: access to education at first level by both formal and non-formal means;
2. Education for promotion of scientific and technological competence and creativity;
3. Education and work;
4. Education and rural development;
5. Education and urban development;
6. Educational technology with stress on mass media and low-cost instructional materials;
7. Professional support services and training of educational personnel;
8. Co-operative studies, reflections and research related to educational development and future orientations.